IMPROVE YOUR MEMORY

Studying has two parts: learning and remembering. Learning is pinpointing the facts and ideas and understanding them; remembering is putting them into long-term storage in your head. For high test grades, you need to do both.

Remembering happens in two ways: by rote and by association. Rote memory is when you repeat something over and over again; associative memory is when you tie two things together in your mind. Associative memory is much more reliable than rote, so it is important to use it as much as possible. Effective memorization relies on two factors: (1) how well you can integrate new information into your prior knowledge and (2) how often you rehearse or practice that information.

Organizing the material not only helps you understand the material, but it helps you recall facts, ideas, events, and logical arguments. If you have a really good memory, you will forget at least one-fourth of what you learn by the end of the day you learn it. Since you will not be able to remember everything, your first job is selection—deciding what is important and what is not.

20 MEMORY TECHNIQUES

Experiment with these techniques to make a flexible, custom-made memory system that fits your style of learning. The 20 techniques are divided into four categories, each of which represents a general principle for improving memory:

1. **Organize it.** Organized information is easier to find.
2. **Use your body.** Learning is an active process; get all your senses involved.
3. **Use your brain.** Work with your memory, not against it.
4. **Recall it.** This is easier when you use the other principles to store information.

Organize It

1. **Learn from the general to the specific.** At the beginning of a course or before beginning a reading assignment, skim the material first for the general idea. Sometimes if you step back to look at the big picture, the details make more sense.

2. **Make it meaningful.** Know what you want from your education, then look for connections between what you want and what you are studying.

3. **Create associations.** The data already stored in your memory is arranged according to a scheme that makes sense to you. When you introduce new data, you can recall it more effectively if you store it near similar or related data.
Use Your Body

4. **Learn it once, actively.** Action is a great memory enhancement; boredom puts memory to sleep. Wake it up by using your arms and legs as well as your eyes, ears, and voice. When you sit at your desk, sit up; sit on the edge of your chair; try standing up when you study; pace back and forth and gesture as you recite material out loud; use your hands.

5. **Relax.** When you are relaxed, you absorb new information more quickly and recall it with greater accuracy. Being relaxed is not the same as being drowsy; it is a state of alertness, free of tension. You can be active and relaxed.

6. **Create pictures.** Visual information is associated with a different part of the brain than verbal information, so creating a picture of a concept anchors the information in two parts of your brain, increasing your chances of recalling that information. Draw diagrams. Make cartoons. Relationships within and among abstract concepts can be "seen" and recalled easily when they are visualized.

7. **Recite and repeat.** Recitation works best when you recite concepts in your own words. When you repeat something out loud, you anchor the concept in two different senses. Reciting silently (in your head) can be useful, but is not as effective as making noise. Your mind can trick itself into thinking it knows something when it doesn't; your ears are harder to fool.

Students who recited aloud retained 80 percent of the material they studied; students who read the same material for the same amount of time without reciting it retained only 20 percent. To get sound working for you, talk over your coursework with a friend. When you read a chapter, summarize its parts, bit by bit, out loud as you go along. Explain it to yourself.

Repetition is also important. It is the most common memory device because it works. Repeat a concept out loud until you know it, then say it five more times.

8. **Write it down.** Our muscles have better memories than our heads. Note-taking is a muscle activity. That is why the act of taking notes--even if you never look at them again--will get you higher marks on a test than just listening. Extend this technique by writing a note not just once, but many times. Writing uses different memory than speaking. Writing is physical, using your arm, your hand, and your fingers. You remember what you do.

The smartest students keep compressing their notes into smaller and smaller size. As they understand relationships between one week's work and the next, they consolidate and organize. Once a week, consolidate that week's notes. Once a month, squeeze the four weeks' notes into one or two pages of clue words and patterns. Before each big exam, do a final organization and consolidation. Make sure your notes are completely accurate. Check facts carefully between one set of notes and the next.

Combine see and say techniques by telling yourself the visual image you have created to remember a particular fact or idea. Then combine auditory and visual memory with muscle memory: as you write, say the words aloud.
Use Your Brain

9. **Reduce interference.** Two hours of studying in front of the television might be worth ten minutes of studying where it is quiet. If you have two hours and want to study and watch television, it is probably better to study for an hour and watch television for an hour. Doing one at a time increases your ability to remember.

10. **Use daylight.** Study your most difficult subjects during daylight hours. Most people can concentrate more effectively during the day.

11. **Overlearn.** Learn more than you intended. Pick a subject apart, examine it, add to it, and go over it until it becomes second nature. The potential rewards are speed, accuracy, and greater confidence at exam time.

12. **Escape the short-term memory trap.** Short-term memory rarely lasts more than several hours. A short review within minutes or hours of a study session can move material from short-term memory into long-term memory. A quick mini-review can save you hours of study time when exams roll around.

Use your notes to test yourself on your memory of the material. One way to make this practice testing more like a real test is to take notes on your notes. These "mini" notes should consist of key words or phrases that will later serve as cues to remind you of whole topics. If you can recall the information with just a key word or two as a reminder, then you have learned the material well enough to be able to use it on an essay exam, for short answer questions, and in conversation.

13. **Distribute learning.** Marathon study sessions are not effective. You can get far more done in three 2-hour sessions than in one 6-hour session. You can get more done if you take regular breaks.

Two kinds of study situations are exceptions to the keep-it-short rule. One is library research, where there is enough change of pace to keep you alert for at least several hours. The other exception is writing a paper. Start writing, and do not stop until you are at least a few pages into the first draft. Stop when you run out of steam.

14. **Be aware of attitudes.** If you believe a subject is difficult or boring, it probably will be. We remember what we find interesting. Remember, everything is related to everything else--look for connections.

15. **Choose what not to store in memory.** Decide what is essential to remember from an assignment or lecture. Extract the core concepts. Ask what you will be tested on as well as what you want to remember, then apply memory techniques to those ideas.

16. **Combine memory techniques.** Memory techniques work better in combination with each other. Choose two or three techniques to use on a particular assignment. Experiment: combine sight, sound, and touch when you study.
Recall It

17. **Remember something else.** When you are stuck and cannot remember something you know you know, remember something else that is related to it. If you cannot recall specific facts, remember the example the instructor used during the lecture. Brainstorming is a good memory jog. When you are stumped in a test, start writing down lots of answers to related questions. The answer you need is likely to appear.

18. **Notice when you do remember.** Notice when you recall information easily and ask yourself what memory techniques you are using naturally. Also notice when it is difficult to recall information. Adjust your learning techniques as needed.

19. **Use it before you lose it.** To remember something, access it a lot: read it, write it, speak it, listen to it, apply it. Find ways to make contact with the material regularly. Study groups are especially effective because they allow you to teach the material. Explaining it to other students helps you focus your attention.

20. **Remember, you never forget.** Adopt an attitude that says, "I never forget anything, although I may have difficulty recalling something from my memory. All I have to do is find where I stored it." Positive thinking works!

**STUDY STRATEGIES**

**Study Groups**

The difference between a study group and a tutorial situation is that a tutor is someone who can be relied on to know what he/she is talking about. The students in a study group, on the other hand, are all learning the material at the same time.

Study groups and study partners can be very effective if certain guidelines are observed. You should only work with people who take the same serious attitude toward their studies as you do. Decide how you are going to work together, make sure everyone shares equally in the responsibilities and the advantages, and stick to your agreement unless everyone agrees to make changes. For best results, here are the ways to use a study group:

1. **When:** Join a study group after you have learned the facts and ideas you need to know to avoid learning incorrect information.
2. **Why:** The purpose of the group should be conversation--sit back, listen to the others, and tell what you know. This exercises your sight and sound senses and your mouth muscles, so you benefit three ways.
3. **How:** An effective technique is for each member to prepare five essay questions in advance and then for the group to take turns answering them all. If your group needs to work on memorization of facts, drill one another with clue words.
4. **Where:** Choose a place where there are no distractions so the group can give its entire attention to the subject.
5. **How long:** One hour spent with everyone's mind on the subject is worth four hours' work with time-outs every few minutes for fun and games.

6. **Who:** Anyone, as long as he or she understands the point of the study group is not to teach, but to discuss facts and ideas that are already learned; not to socialize, but to study.

A study group or partner cannot take the place of effective individual study. You must do the groundwork (attend lectures, read the textbook, etc.) and you must take the first steps to recall and review the material yourself. Study groups or partners can drill each other, help each other practice new skills, clarify difficult points, present new viewpoints on the material, or pose questions for each other.

**Mnemonic Devices**

Some students employ mnemonic (ne mon' ik) devices to help them remember crucial information. Some mnemonics are words whose letters stand for things to be remembered (ROY G BIV is the mnemonic for the colors of the light spectrum: red, orange, yellow, green, blue, indigo, violet. HOMES lists the names of the Great Lakes: Huron, Ontario, Michigan, Erie, Superior); some are sentences in which the first letter of each word is the key. ("Every good boy does fine" names the musical notes on the lines of the treble staff: E,G,B,D,F.) Mnemonics can be useful, but if you create too many of them, you have the problem of trying to memorize the mnemonics rather than the information they represent.

**External Memory**

External memory refers to all physical devices that help memory: lists, memos, diaries, alarm clocks, etc. Many people fail to make the best use of such help. One handy form of external memory is the deliberately misplaced object. Put a familiar object in an unfamiliar place where you cannot miss seeing it. When you see it, it will serve as a reminder to you and help you recall what you wanted to remember.

**Reviewing**

One of the oldest facts known about memory is that the more times you review your notes by testing yourself, the longer you will remember the information. Even a single review after you think you know it well can dramatically increase the length of time over which you can remember something. It is also important to space out review sessions rather than cramming them all together--30 minutes per day is better than three times in a row for 90 minutes. There is a point of diminishing return: if you space out your reviews too much, you begin to forget. For most people, the ideal spacing is:

- 1st review-5-10 minutes after learning
- 2nd review--later the same day
- 3rd review--one week later
- 4th review--one month later
- 5th review-just before the exam.
To take further advantage of spaced-out reinforcement, break up your final test review time into two periods.

**Study Breaks**

You will do your most effective studying if you take a 10-minute break between subjects. It helps three ways:

1. It is part of behavior modification and rewards you for putting in 50 minutes of study effort.
2. It acts just like a brief nap and allows for some free subconscious reinforcement of your learning.
3. It keeps brain-wave interference at a minimum by separating the two subjects very clearly in your mind.

DON'T BE RIGID ABOUT TAKING BREAKS or you will end up watching the clock more than the books. One good time to take a short break (5 minutes) is right after reading your textbook assignment.

**Sleep**

Individuals who slept after memorizing material recalled more than those who stayed awake. It makes little difference whether a person sleeps immediately after learning or waits a few hours; it is the sleep that is important. Sleep before learning does not help learning. In fact, a short period of sleep just before new learning can seriously increase forgetting. If students were awakened two or four hours before learning, however, their memory was no longer affected by sleep.

If you do not plan to go over and relearn material you study, it is best to sleep four hours or longer between the time you study and the time you have to recall the information. Do not sleep before you study unless you allow yourself a period of time of being awake before you start studying seriously.

**Rote Memorization**

Straight memorizing is the least dependable way to remember. To keep straight memorizing to a minimum:

- **Associate.** Link it to something you do remember.
- **Visualize.** Make a picture in your mind's eye.
- **Sound out.** Say it aloud and listen to its sound.
- **Count.** It helps if you know the number of points you need to remember.
- **Abbreviate.** The mind's eye recalls short blocks of capital letters more quickly than several long words. Formulas are abbreviations too.

Some things have to be memorized primarily by rote (poems, a part in a play, etc.). Find key words in the passage, then search for a relationship that leads you from one to the next. Unless a passage is very long, try to memorize it all at once instead breaking it up into pieces. If you
must learn it piecemeal, keep the chunks as big as possible, and work hardest on learning the links between the chunks. For example, if you are memorizing the Preamble to the Constitution, emphasize the first word of each statement to get yourself started. Repeat the fact or idea or passage until you know it cold—then wait five minutes and repeat it a few times more. This is called overlearning.

Tape lists of the material you are memorizing in various places: the bathroom mirror, a kitchen cabinet door, your car dashboard, your wallet, etc. This way you can practice your recall at every opportunity.

**Cramming**

Last-minute cramming is not a good thing to do. It is definitely not learning and it is a very ineffective way to prepare for a test. In order to effectively prepare for a test at the last minute, you must be very selective in what you study. You must eliminate from consideration most of what you should learn in order to study and remember what you must know in order to get a passing grade. Select only a handful of the most general and significant main ideas from each chapter of the text and from your lecture notes. Write this information down, along with the absolute minimum of supporting facts and details. Put aside all your other materials and concentrate all your efforts on those few study sheets. Obviously, you have taken a chance by selecting only certain ideas and facts, but trying to remember too much dooms you to remembering nothing.

Sources:

Ellis, Dave, *Becoming a Master Student, 7th Ed.*
Knight, Theodore O., *Study Strategies for College.*