

## 4.5 Remembering Course Materials

### LEARNING OBJECTIVES

1. Identify what is important to remember.
2. Understand the difference between short- and long-term memory.
3. Use a variety of strategies to build your memory power.
4. Identify the four key types of mnemonic devices.
5. Use mnemonics to remember lists of information.

Up to now we have covered how to capture material in your notes. The rest of this chapter is dedicated to strategies for recording ideas and facts in your memory.

### The Role of Memorization in Learning

Have you ever gone into an exam you have studied for and drawn a blank on a particular question? Have you ever walked into a room only to forget for a moment why you went there? Have you ever forgotten where you left your keys? How about finding yourself in a conversation with someone whose name you can't remember? The fact is, memory fails everyone from time to time. It is not surprising that students, with a huge amount of information they must commit to memory (not to mention frequent distractions and interruptions), are often frustrated by their memory.

Let's start by taking some of the pressure off you. You will not be required to memorize everything your instructor says in a class—nor should you try to. There is way too much to capture. People speak at a rate of 100 to 150 words per minute. An average 50-minute lecture may contain around 7,500 words. By listening effectively and taking notes, your job is to distill the main ideas and a few keywords. *These* are the things you should choose to memorize.

In your early and high school education, memorization was a key aspect of learning. You memorized multiplication tables, the names of the states, and vocabulary words. Memorized facts ensured your success on multiple-choice questions. In college, however, most of your work is focused on understanding the material in depth. Remembering the year of the 9/11 attack (2001) is far less important than grasping the impact of that attack on American foreign policy. Understanding themes and ideas and being able to think critically about them is really the key to your success in college learning. For more on critical thinking skills, see [Chapter 3 "Thinking about Thought"](#). Although memorization is not the primary key to success, having a good memory is important to capture ideas in your mind, and it helps tremendously in certain subjects like sciences and foreign languages.

### How Memory Works

**Memory** is the process of storing and retrieving information. Think of a computer. In many ways it is an electronic model of the human memory. A computer stores, retrieves, and processes information similarly to how the human mind does. Like the human version, there are two types of memory: short-term or active memory (RAM in the

computer) and long-term or passive memory (the computer's hard drive). As its name suggests, short-term or active memory is made up of the information we are processing at any given time. Short-term memory involves information being captured at the moment (such as listening in class) as well as from information retrieved from our passive memory for doing complex mental tasks (such as thinking critically and drawing conclusions). But short-term memory is limited and suffers from the passing of time and lack of use. We begin to forget data within thirty seconds of not using it, and interruptions (such as phone calls or distractions) require us to rebuild the short-term memory structure—to get “back on task.” Learn more about multitasking in [Chapter 6 “Preparing for and Taking Tests”](#). To keep information in our memory, we must either use it or place it into our long-term memory (much like saving a document on your computer).

How we save information to our long-term memory has a lot to do with our ability to retrieve it when we need it at a later date. Our mind “saves” information by creating a complex series of links to the data. The stronger the links, the easier it is to recall. You can strengthen these links by using the following strategies. You should note how closely they are tied to good listening and note-taking strategies.

- **Make a deliberate decision to remember the specific data.** “I need to remember Richard’s name” creates stronger links than just wishing you had a better memory for names.
- **Link the information to your everyday life.** Ask yourself, “Why is it important that I remember this material?”—and answer it.
- **Link the information to other information you already have “stored,”** especially the key themes of the course, and you will recall the data more easily. Ask yourself how this is related to other information you have. Look for ways to tie items together. Are they used in similar ways? Do they have similar meanings? Do they sound alike?
- **Mentally group similar individual items into “buckets.”** By doing this, you are creating links, for example, among terms to be memorized. For example, if you have to memorize a vocabulary list for a Spanish class, group the nouns together with other nouns, verbs with verbs, and so forth. Or your groupings might be sentences using the vocabulary words.
- **Use visual imagery.** Picture the concept vividly in your mind. Make those images big, bold, and colorful—even silly! Pile concepts on top of each other or around each other; exaggerate their features like a caricature; let your imagination run wild. Humor and crazy imagery can help you recall key concepts.
- **Use the information.** Studies have generally shown that we retain only 5 percent of what we hear, 10 percent of what we read, 20 percent of what we learn from multimedia, and 30 percent of what is demonstrated to us, but we do retain 50 percent of what we discuss, 75 percent of what we practice by doing, and 90 percent of what we teach others or use immediately in a relevant activity. Review your notes, participate in class, and study with others.
- **Break information down into manageable “chunks.”** Memorizing the ten-digit number “3141592654” seems difficult, but breaking it down into two sets of three digits and one of four digits, like a phone number—(314) 159-2654—now makes it easier to remember. (Pat yourself on the back if you recognized that series of digits: with a decimal point after the three, that’s the value of pi to ten digits. Remember your last math class?)
- **Work from general information to the specific.** People usually learn best when they get the big picture first, and then look at the details.

- **Eliminate distractions.** Every time you have to “reboot” your short-term memory, you risk losing data points. Multitasking—listening to music or chatting on Facebook while you study—will play havoc with your ability to memorize because you will need to reboot your short-term memory each time you switch mental tasks.
- **Repeat, repeat, repeat.** Hear the information; read the information; say it (yes, out loud), and say it again. The more you use or repeat the information, the stronger the links to it. The more senses you use to process the information, the stronger the memorization. Write information on index cards to make flash cards and use downtime (when waiting for the subway or during a break between classes) to review key information.
- **This is a test.** Test your memory often. Try to write down everything you know about a specific subject, from memory. Then go back and check your notes and textbook to see how you did. Practicing retrieval in this way helps ensure long-term learning of facts and concepts.
- **Location, location, location.** There is often a strong connection between information and the place where you first received that information. Associate information to learning locations for stronger memory links. Picture where you were sitting in the lecture hall as you repeat the facts in your mind.

## JUST FOR FUN

Choose a specific fact from each of your classes on a given day. Now find a way of working that information into your casual conversations during the rest of the day in a way that is natural. Can you do it? What effect do you think that will have on your memory of that information?

## EXERCISE YOUR MEMORY

Read the following list for about twenty seconds. After you have read it, cover it and write down all the items you remember.

Arch				Pen
Chowder				Maple
Airplane				Window
Kirk				Scotty
Paper clip				Thumb drive
Column				Brownies
Oak				Door
Subway				Skateboard
Leia				Cedar
Fries				Luke

How many were you able to recall? Most people can remember only a fraction of the items.

Now read the following list for about twenty seconds, cover it, and see how many you remember.

Fries				Skateboard
Chowder				Subway
Brownies				Luke
Paper clip				Leia

Pen				Kirk
Thumb drive				Scotty
Oak				Column
Cedar				Window
Maple				Door
Airplane				Arch

Did your recall improve? Why do you think you did better? Was it easier? Most people take much less time doing this version of the list and remember almost all the terms. The list is the same as the first list, but the words have now been grouped into categories. Use this grouping method to help you remember lists of mixed words or ideas.

## Using Mnemonics

What do the names of the Great Lakes, the makings of a Big Mac, and the number of days in a month have in common? They are easily remembered by using mnemonic devices.

**Mnemonics** (pronounced neh-MA-nicks) are tricks for memorizing lists and data. They create artificial but strong links to the data, making recall easier. The most commonly used mnemonic devices are acronyms, acrostics, rhymes, and jingles.

**Acronyms** are words or phrases made up by using the first letter of each word in a list or phrase. Need to remember the names of the Great Lakes? Try the acronym HOMES using the first letter of each lake:

- **H**uron
- **O**ntario
- **M**ichigan
- **E**rie
- **S**uperior

To create an acronym, first write down the first letters of each term you need to memorize. Then rearrange the letters to create a word or words. You can find acronym generators online (just search for “acronym generator”) that can help you by offering options. Acronyms work best when your list of letters includes vowels as well as consonants and when the order of the terms is not important. If no vowels are available, or if the list should be learned in a particular order, try using an acrostic instead.

**Acrostics** are similar to acronyms in that they work off the first letter of each word in a list. But rather than using them to form a word, the letters are represented by entire words in a sentence or phrase. If you’ve studied music, you may be familiar with “Every Good Boy Deserves Fudge” to learn the names of the notes on the lines of the musical staff: E, G, B, D, F. The ridiculous and therefore memorable line “My Very Educated Mother Just Served Us Nine Pizzas” was used by many of us to remember the names of the planets (at least until Pluto was downgraded):

My	Mercury
Very	Venus
Educated	Earth
Mother	Mars
Just	Jupiter
Served	Saturn

Us	Uranus
Nine	Neptune
Pizzas	Pluto

To create an acrostic, list the first letters of the terms to be memorized in the order in which you want to learn them (like the planet names). Then create a sentence or phrase using words that start with those letters.

**Rhymes** are short verses used to remember data. A common example is “In fourteen hundred and ninety-two, Columbus sailed the ocean blue.” Need to remember how many days a given month has? “Thirty days hath September, April, June, and November...,” and so forth. Writing rhymes is a talent that can be developed with practice. To start, keep your rhymes short and simple. Define the key information you want to remember and break it down into a series of short phrases. Look at the last words of the phrases: can you rhyme any of them? If they don’t rhyme, can you substitute or add a word to create the rhyme? (For example, in the Columbus rhyme, “ninety-two” does not rhyme with “ocean,” but adding the word “blue” completes the rhyme and creates the mnemonic.)

**Jingles** are phrases set to music, so that the music helps trigger your memory. Jingles are commonly used by advertisers to get you to remember their product or product features. Remember “Two all-beef patties, special sauce, lettuce, cheese, pickles, onions on a sesame seed bun”—the original Big Mac commercial. Anytime you add rhythm to the terms you want to memorize, you are activating your auditory sense, and the more senses you use for memorization, the stronger the links to the data you are creating in your mind. To create a jingle for your data, start with a familiar tune and try to create alternate lyrics using the terms you want to memorize. Another approach you may want to try is reading your data aloud in a hip-hop or rap music style.

## CREATIVE MEMORY CHALLENGE

Create an acrostic to remember the noble gasses: helium (He), neon (Ne), argon (Ar), krypton (Kr), xenon (Xe), and the radioactive radon (Rn).

Create an acronym to remember the names of the G8 group of countries: France, the United States, the United Kingdom, Russia, Germany, Japan, Italy, and Canada. (Hint: Sometimes it helps to substitute terms with synonyms—“America” for the United States or “England” for the United Kingdom—to get additional options.)

Create a jingle to remember the names of the Seven Dwarfs: Bashful, Doc, Dopey, Grumpy, Happy, Sleepy, and Sneezy.

Mnemonics are good memory aids, but they aren’t perfect. They take a lot of effort to develop, and they also take terms out of context because they don’t focus on the meaning of the words. Since they lack meaning, they can also be easily forgotten later on, although you may remember them through the course.

## KEY TAKEAWAYS

- Understanding ideas is generally more important in college than just memorizing facts.
- To keep information in our memory, we must use it or build links with it to strengthen it in long-term memory.

- Key ways to remember information include linking it to other information already known; organizing facts in groups of information; eliminating distractions; and repeating the information by hearing, reading, and saying it aloud.
- To remember specific pieces of information, try creating a mnemonic that associates the information with an acronym or acrostic, a rhyme or a jingle.

## CHECKPOINT EXERCISE

1. For each of the following statements, circle T for true or F for false:

T	F	Preparing for class is important for listening, for taking notes, and for memory.
T	F	Multitasking enhances your active memory.
T	F	If you listen carefully, you will remember most of what was said for three days.
T	F	“Use it or lose it” applies to information you want to remember.
T	F	Mnemonics should be applied whenever possible.