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How To Memorize Things Quickly & Effectively – Part 1: Chunking & Spaced Repetition

What separates you from someone that can memorize π (pi) to the 100th decimal? It's not natural ability; it's technique and practice. In this tutorial, I will teach you how to master memorization and change your life.

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1. Chunking

Did you know that there is an optimal size of information for memorization? In fact, there are countless examples of it all around you.

Serial Numbers	X3J9 – 90H1 – 15PA – 6UIM
Credit Card Numbers	4617-1783-6782-1234
Mathematical Numbers	108,000,000
Phone Numbers	(767) 891-1234
Company Slogans	Just Do It
Car Models	RX450 (pronounced “R-X-4-50”)

Scientists and marketers have long known that the ideal information chunk size is approximately 3 to 4 units, and have used this knowledge to design everything around us to be easier to memorize.

Whether it’s a vocabulary list or set of concepts, break them down into chunks of 3 to 4 units for optimal memorization.

Categorization

A powerful complementary technique to chunking is categorization. This entails re-ordering the items into groups based on common traits. This could be anything from color, alphabetical, physical size, type, cost, age, difficulty, etc.

Let’s say you have to memorize this list of 15 animal types.

- Rabbit
- Cat
- Elephant
- Tuna
- Octopus
- Salmon
- Dolphin
- Peacock
- Crow
- Dog
- Platypus
- Giraffe

- Pigeon
- Hippo
- Crocodile

Instead of just chunking the list into smaller groups, you could categorize them into groups, like this:

Pets	Ocean	Birds	Ugly	Big
Rabbit	Tuna	Crow	Platypus	Elephant
Cat	Salmon	Pigeon	Crocodile	Giraffe
Dog	Dolphin	Peacock	Octopus	Hippo

By doing this, you create a strong sense of order and connection between seemingly random items. Now, the word “Rabbit” will help you recall the other “Pets” items, “Cat” and “Dog.”

The Chunking System

If you need to memorize a large amount of information in a specific order, a more systematic approach is required. The Chunking System builds on top of Chunking and Categorization and adds a process that ensures maximum retention.

Click the tabs 1 through 6 below to see how the The Chunking System would be applied to the list of animals.

Step 1

Memorize the first chunk to ~80% confidence (see the **Note** below for an explanation as to why only 80% confidence is needed).

Pets	Ocean	Birds	Ugly	Big
Rabbit	Tuna	Crow	Platypus	Elephant
Cat	Salmon	Pigeon	Crocodile	Giraffe
Dog	Dolphin	Peacock	Octopus	Hippo

Step 2

Memorize the second chunk to ~80% confidence.

Pets	Ocean	Birds	Ugly	Big
Rabbit	Tuna	Crow	Platypus	Elephant
Cat	Salmon	Pigeon	Crocodile	Giraffe
Dog	Dolphin	Peacock	Octopus	Hippo

Step 3

Review them together to ~80% confidence.

Pets	Ocean	Birds	Ugly	Big
Rabbit	Tuna	Crow	Platypus	Elephant
Cat	Salmon	Pigeon	Crocodile	Giraffe
Dog	Dolphin	Peacock	Octopus	Hippo

Step 4

Memorize the third chunk to ~80% confidence.

Pets	Ocean	Birds	Ugly	Big
Rabbit	Tuna	Crow	Platypus	Elephant
Cat	Salmon	Pigeon	Crocodile	Giraffe
Dog	Dolphin	Peacock	Octopus	Hippo

Step 5

Review them together to ~80% confidence.

Pets	Ocean	Birds	Ugly	Big
Rabbit	Tuna	Crow	Platypus	Elephant
Cat	Salmon	Pigeon	Crocodile	Giraffe
Dog	Dolphin	Peacock	Octopus	Hippo

Step 6

Repeat the process of memorizing the next chunk, then reviewing them together until you have completed all of the items.

In short: memorize the first chunk, memorize the next chunk, review them together, then repeat this process.

This process works particularly well for lists, speeches and text. If the information you want to memorize is larger than 20 chunks, then break it up into multiple sets of ~20 chunks and apply the same process to the sets (i.e. memorize the first set, memorize the second set, review them together, etc.).

In the case of speeches and text, chunk sizes should vary so that you don't break sentences up in unnatural ways that would make it more difficult to memorize.

For example, if you wanted to memorize this sentence, you shouldn't set a fixed chunk size to 4 words.

- The Chunking System builds | on top of Chunking | and Categorization and adds | a process that ensures | maximum retention.

Instead, you should take into consider the natural flow of the language.

- The Chunking System | builds on top of | Chunking and Categorization | and adds a process | that ensures maximum retention.

Note: It's only necessary to reach ~80% confidence at each step because, realistically, it's nearly impossible to memorize something to 100% confidence in one session. Instead, aiming for 80% confidence is the most efficient approach. But, the technique covered in the next step will help you get 90-95% confidence!

2. Spaced Repetition

The [spacing effect \(http://en.wikipedia.org/wiki/Spacing_effect\)](http://en.wikipedia.org/wiki/Spacing_effect) states that we are better at memorizing things over time rather than all together at once. Although incredibly well established and very intuitive, this technique is often ignored. So, instead of trying to convince you of the merits of the spacing effect, I will show you a tool that applies the spacing effect for you.

Spaced Repetition (SRS) Flashcards

This is, by far, the most useful memorization tool for memorizing lists, vocabulary, concepts or other kinds of data. SRS flashcard applications organize the cards for you based on how well you have memorized the material. In this way, you don't waste time reviewing cards you know, and spend more time on cards you don't. It's a simple, but incredibly powerful concept. In addition, the huge community of flash card deck creators, has made it so that flash card decks already exists for virtually every course, text and language.

Here's how it works:

1. **Download Anki (<https://ankiweb.net/>)**– This is the most popular free SRS flashcard program. Please note that the application is free for Android, desktops and online, but is not free on iOS.
2. **Choose a pre-made deck** – Add a pre-made deck for your course, textbook, language, etc. There are hundreds of thousands of free pre-made decks available for free either through Anki's database or through a simple Google search. Unless you are studying something really obscure, there are probably dozens of decks for your course.

3. **Study the deck** – The default settings within Anki prevent you from studying too much in one session, and limit the number of cards per day. This is because it's designed to be used on a regular basis (e.g. 5 to 10 minutes a day).

The combination of having a huge database of pre-made decks, being able to use the application anywhere (on your smartphone, tablet or computer) and the advantage of having the program organize the cards for you, makes SRS flashcards an invaluable memorization tool.

3. Understand Memory

What makes something easy or hard to memorize? If you can identify why something is hard, you can adapt your approach to compensate.

These are the 11 properties that determine how difficult something is to memorize.

1. **Familiarity** – How much exposure you have had to it
2. **Size** – How much there is
3. **Order** – How logically structured it is
4. **Saliency** – How interesting it is
5. **Complexity** – How difficult it is
6. **Relevance** – How useful it is to you
7. **Importance** – How it will impact your life
8. **Immediacy** – How soon it is required
9. **Abstractness** – How conceptual it is
10. **Humanness** – How relatable it is to the human experience
11. **Sensuous** – How you perceive it with your senses

And, here are the ways to improve the effectiveness of your memorization strategy based on each property.

1. **Familiarity** – Review it more frequently
2. **Size** – Break it down into smaller chunks
3. **Order** – Restructure it in a way that makes more sense to you
4. **Saliency** – Create a whacky or funny story about it
5. **Complexity** – Break it down into smaller, simpler steps
6. **Relevance** – Find how it could be useful in your life
7. **Importance** – Set a goal/objective
8. **Immediacy** – Set a deadline
9. **Abstractness** – Relate it to something that exists around you

10. **Humanness** – Include it in a story with you as the main character
11. **Sensuous** – Associate it with another sense (smell, taste, touch, etc.)

Can you see why this is so useful? How often do you just review something more often when you can't memorize it? What if you made a whacky story out of it? Drew a picture of it? Connected it to a life-experience?

Whereas most people rely mainly on Familiarity, elite memorizers use a combination of Salience, Relevance, Humanness and Sensuous approaches. For example, in Part 3 of this tutorial, you will read about an approach called "Method of Loci," which requires you to visualize yourself walking through a familiar area (e.g. your room) and interact with things (e.g. your bed, lamp, TV, etc.) that you then connect to the things you want to memorize.

This might sound crazy to you now, but you know what else sounds crazy? Reading the same thing over and over 10 times and still not being able to memorize it. Advanced memorization techniques use creative approaches to make things more memorable, rather than forcing memorization through repetition.

You will learn more about these techniques in parts 2 and 3 of this tutorial.

4. Preparation

Don't underestimate how much proper preparation can influence your ability to memorize. Did you know that Olympic athletes prepare for weeks, months, even years for a single performance? Preparation is what separates the best from the rest. By applying these simple best practices, you can easily double or triple your memorization abilities.

Don't Listen To Music (With Lyrics)

How well can you listen to another person speak while you listen to music? Music, especially music with lyrics, interferes with your language-processing center (which is necessary for most academic types of studying). By listening to lyric-heavy music like rap, hip-hop, country or pop, you're sabotaging your ability to memorize. If you must listen to something, make it something instrumental or ambient-type music.

Disconnect

Don't let a Facebook notification disrupt your concentration 5 minutes after you start. Turn off notifications on your phone and computer by either turning the wi-fi off, putting it on silent, turning off notifications or turning the power off. Set a timer for 20 minutes and dedicate the next to one thing and one thing only, memorizing.

Choose Optimal Memorization Times

An optimal memorization time is when you have energy, your mind is clear and when you're least likely to be interrupted. A sub-optimal memorization time is when you're tired, distracted, stressed and likely to be interrupted. For most people, studying early in the morning or late at night, when everyone else is asleep, works best.

Move Around

Standing and walking promotes blood flow and engages your muscles, keeping you alert and engaged, while sitting results in reduced blood flow and oxygen to the brain. If possible, pick up the material you want to memorize and review it while leaning against a wall, pacing back-and-forth in your room or walking in your hallway.

5. Preview

One of the simplest and most effective techniques to improve memorization is to preview it. By previewing the material, you give yourself a better understanding of the context and meaning (i.e. "seeing the big picture").

- Read the relevant Wikipedia article
- Search for a video summary or explanation on YouTube
- Quickly skim the chapter/book/material, paying special attention to the headers, emphasized content, bold text and chapter summaries
- Search for summaries/explanations on Google
- Search for it on [Quora.com](https://www.quora.com/) (the world's biggest Q&A platform)
- Search for it on [Reddit.com](https://www.reddit.com/) (the world's biggest online forum)
- Search for relevant graphics on Google Images

A well-made educational YouTube video or well-written Wikipedia article can sometimes teach you more in 5 minutes than an hour of studying. This doesn't mean

you can replace studying the material, because there will always be information that is missed or inadequately explained. A preview is meant to be just that, a preview.

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