

Short-term Memory

by Sophia Tutorial



WHAT'S COVERED

This tutorial will cover the concept of short-term memory. Our discussion breaks down as follows:

1. Short-Term Memory
2. Capacity

1. Short-Term Memory

When forming memories, much of the information a person first takes in is discarded. However, if something catches a person's attention or they choose to focus on a piece of sensory information, it will move into **short-term memory**.

Short-term memory is a system of memory that temporarily stores small amounts of information that we are aware of. The important aspect of short-term memory is what is called selective attention. Selective attention allows us to focus on specific details and information, and bring them to our conscious awareness.

➦ **EXAMPLE** If a teacher is in a noisy classroom, they might not be able to focus on every student at once. The teacher can use their selective attention to focus on one particular student that needs help, and not be overwhelmed by the sensory information around them.

Working memory is similar to short-term memory in that it allows us to take information and be aware of it consciously for a short period of time, but it also allows us to manipulate and process it. It helps a person to encode the information with meaning, which is later used to store the information in the long-term memory.



TERMS TO KNOW

Short-Term Memory

The system of memory that holds small amounts of information that we are consciously aware of for short periods of time

Working Memory

Memory which allows us to not only take in information like short-term memory but also examine, manipulate and process it

2. Capacity

So, what is actually meant by short-term memory?

- Information can be retained in the short-term memory anywhere from just a few seconds up to 20 to 30 seconds in length. This period of time can be extended, and the information kept longer if it is repeated or rehearsed. When information is repeated, it is put right back into the short-term memory.
- Short-term memory is very sensitive to interruptions. Suppose you are trying to remember a phone number. If someone comes up to you and begins talking to you about other numbers, you may lose the phone number from your short-term memory.
- Short-term memory can hold approximately seven to nine different **information bits**. If you're trying to remember a person's phone number, then remembering seven numbers is doable. However, if you also have to remember the area code, now you've got 10 pieces of information to remember, which might be a lot more difficult.
- We can remember more information if we divide it into **chunks**. Chunking means putting together the pieces of information into more meaningful groups so we can more easily remember them. If you had four numbers like 1, 9, 8, and 4, you might forget them when trying to remember each one individually. However, if you put them together into 1984, like the year, then you will be able to remember those numbers more easily.}}
- Information can also be stored within the short-term memory visually, as images or aspects of images, but more often information is stored through phonetic meaning, or the sounds that the information makes. A person is more apt to remember a name that they hear in the short term versus a picture or place.
- Information in the short-term memory can be further processed and passed on to the long-term memory for longer storage. Or, information in the short-term memory can be forgotten. Most of the information in the short-term memory simply gets dropped from memory; only important things are remembered in the long-term memory.



TERMS TO KNOW

Information Bits

Individual pieces of information that a person can retain in their short-term memory (which holds between 7 and 9 bits at a time)

Chunk

Information put into a meaningful group, which allows a person to remember more

It might be helpful to use an analogy to understand memory. Think of your memory as an office worker sorting paperwork. The papers are piling up on this person's desk. Most of these papers are ignored. They are just sensory information, and they are tossed directly into the trash.

Certain papers, however, have a big notice at the top, that says "PAY ATTENTION!" The worker will review these documents. They represent your short-term memory.

At this point, most of these papers are still irrelevant, and will get discarded, but those that are important will be filed for later use by the worker.



SUMMARY

When a person decides to focus on a piece of sensory information, it will move into **short-term memory**. This is the system of memory that temporarily stores small amounts of information.

Short-term memory has limited **capacity**. Information can be held for up to 30 seconds, but this timeframe can be extended if the information is repeated. Short-term memory is also sensitive to interruptions. Only around seven to nine bits of information can be retained at a time, but the amount can be increased by chunking information into meaningful groups.

Good luck!

Source: This work is adapted from Sophia author Erick Taggart.



TERMS TO KNOW

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