

# COGNITIVE PSYCHIC PROCESSES

1. Thinking.
2. Imagination.
3. Memory.



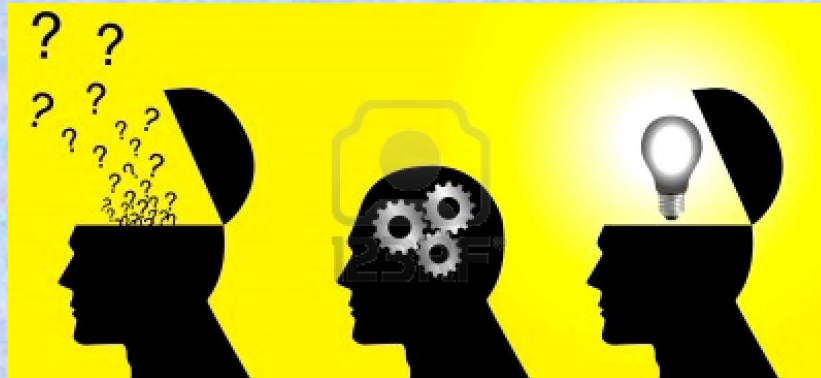
# 1. Thinking

is a cognitive process of forming of mental images or concepts. Also it means the process of cognitive problem solving through the sorting, organizing, and classification of facts and relationships.



# The process of thinking

The process of thinking is the cognitive mental process which, through analytic and synthetic operations, abstracting and generalizing ones, obtains products under the form of an idea, concept or judgment.



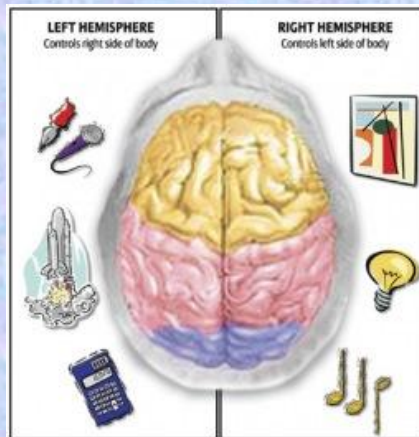
# Types of Thinking



**Critical Thinking**



**Creative Thinking**





# Critical Thinking is

the process we use to reflect on assess and judge the assumption underlying our own and others ideas and efforts.

Critical thinking involves logical thinking and reasoning including skills such as comparison, classification, sequencing, cause/effect, analogies, deductive and inductive reasoning, planning, hypothesizing, and critique.

# Critical Thinkers

- Recognize underlying assumptions.
- Scrutinize arguments.
- Judge ideas.
- Judge the rationality of these justifications by comparing them to a range of varying interpretations and prospective.
- Provide positive as well as negative appraisal.



# Creative Thinking is

the process we use to develop ideas that are unique, useful and worthy of further elaboration.

Creative thinking involves creating something new or original. It involves the skills of flexibility, originality, fluency, elaboration, brainstorming, modification, imagery, metaphorical thinking. The aim of creative thinking is to stimulate curiosity and promote divergence.





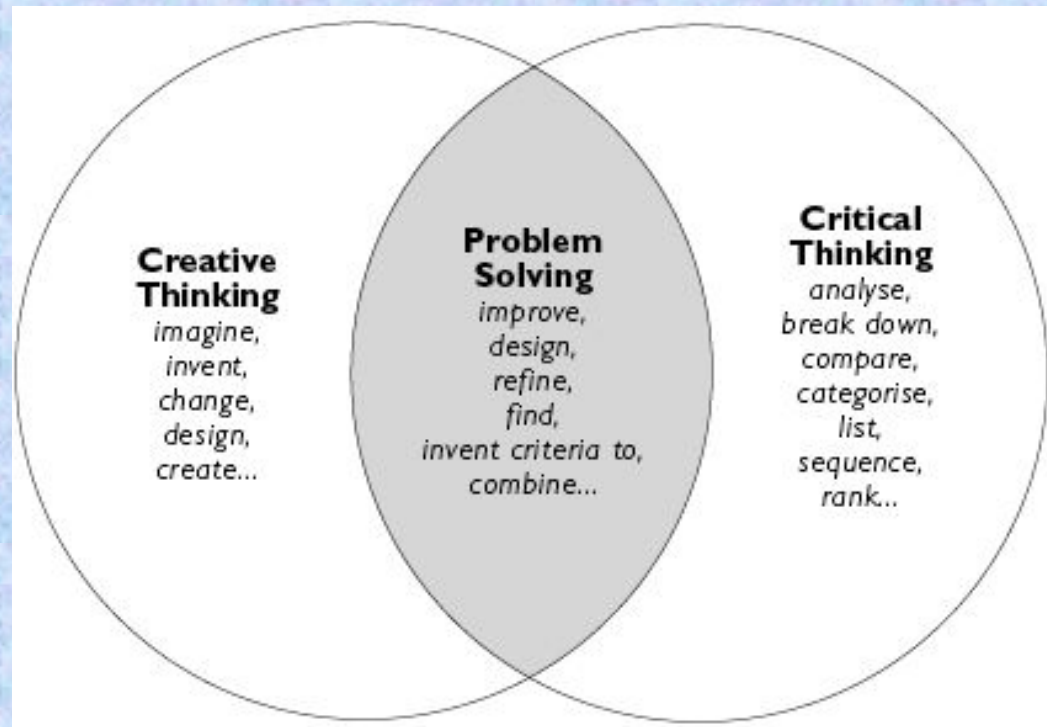
# Creative Thinkers:

- Consider rejecting standardized formats for problem solving.
- Have an interest in a wide range of related and divergent fields.
- Take multiple perspectives on a problem.
- Use trial-and-error methods in their experimentation.
- Have a future orientation.
- Have self-confidence and trust in their own judgment.

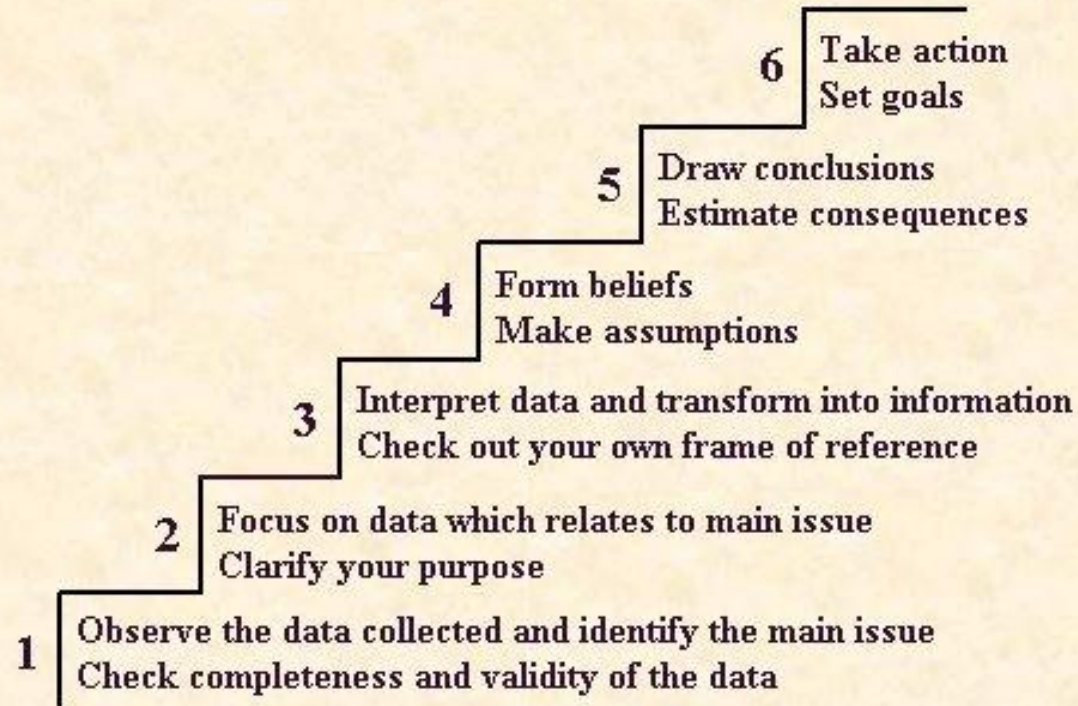




Problem solving is an activity what includes elements of both of the thinking types:



# Stages of thinking



## 2. Imagination

Process of formation of a mental image of something that is neither perceived as real nor present to the senses, the ability to confront and deal with reality by using the creative power of the mind; resourcefulness.





# Content of imagination

Imagination is considered as the power to recombine the materials furnished by experience or memory, for the accomplishment of an elevated purpose; the power of conceiving and expressing the ideal.

A mental image formed by the action of the imagination as a faculty; a conception; a notion.

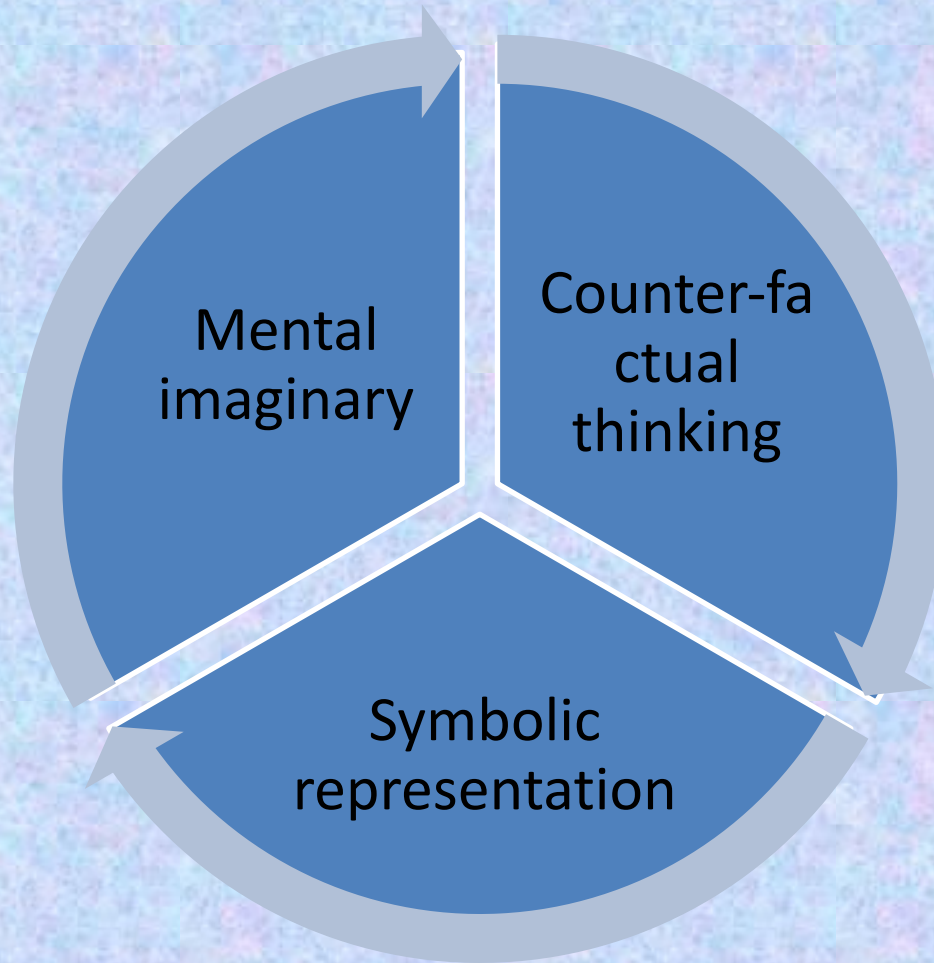


# Work of imagination

Imagination is the power of reproducing images stored in the memory under the suggestion of associated images (reproductive imagination) or of recombining former experiences in the creation of new images directed at a specific goal or aiding in the solution of problems (creative imagination).



# Components of imagination



# Mental imaginary

— the capacity to 'see things in the mind's eye' — is the most obvious concomitant of imagination. If we ask someone to imagine themselves on holiday, they may report sights, smells, sounds, and tastes from an actual holiday, that is, memories of past experiences stored or accessed in the form of images.

Imagination is not necessarily or exclusively image based. Such processes are likely to involve verbal as well as non-verbal or imaginal thinking.

# Counterfactual thinking

— the capacity to disengage from reality in order to think about events and experiences which have not actually occurred and might never occur — is a crucial feature of much imaginative thought. Counterfactual imagining is also involved in contemplating potential courses of action, fantasy and pretence, and understanding other people's thoughts, beliefs, and desires, all of which are likely to involve verbal as well as non-verbal processes.

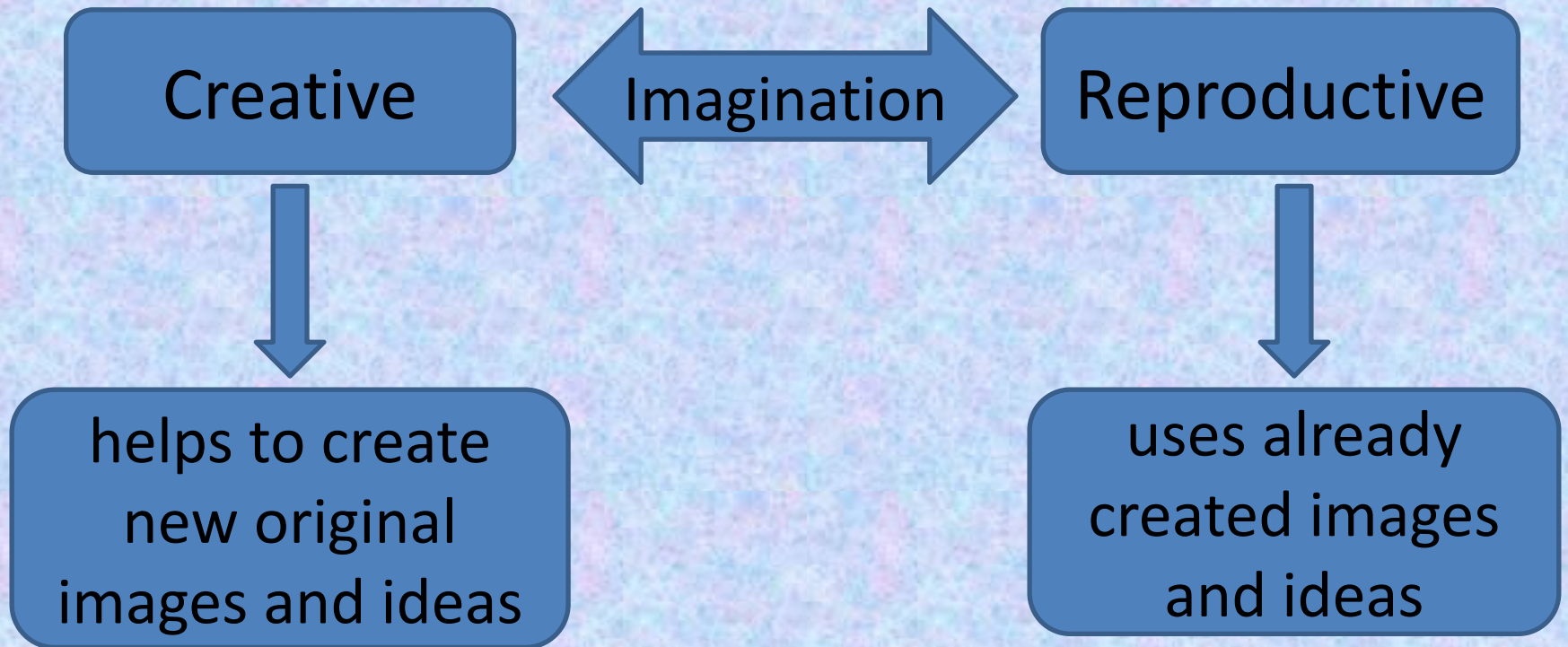


# Symbolic representation

— the use of concepts and images to evoke or represent real-world entities, or the use of one set of real-world entities to evoke others. Imagination appears distinctive in the quality and scope of the symbolism involved.

Thus a sequence of notes may be 'heard' as a mountain stream; a child engaged in a pretend fight readily accepts that an ordinary twig 'is' a sword; an adult may believe in life after death, or that supernatural beings can travel through solid objects.

# Types of imagination



# Depending on sphere of activity:



**Artistic imagination**



**Scientific imagination**



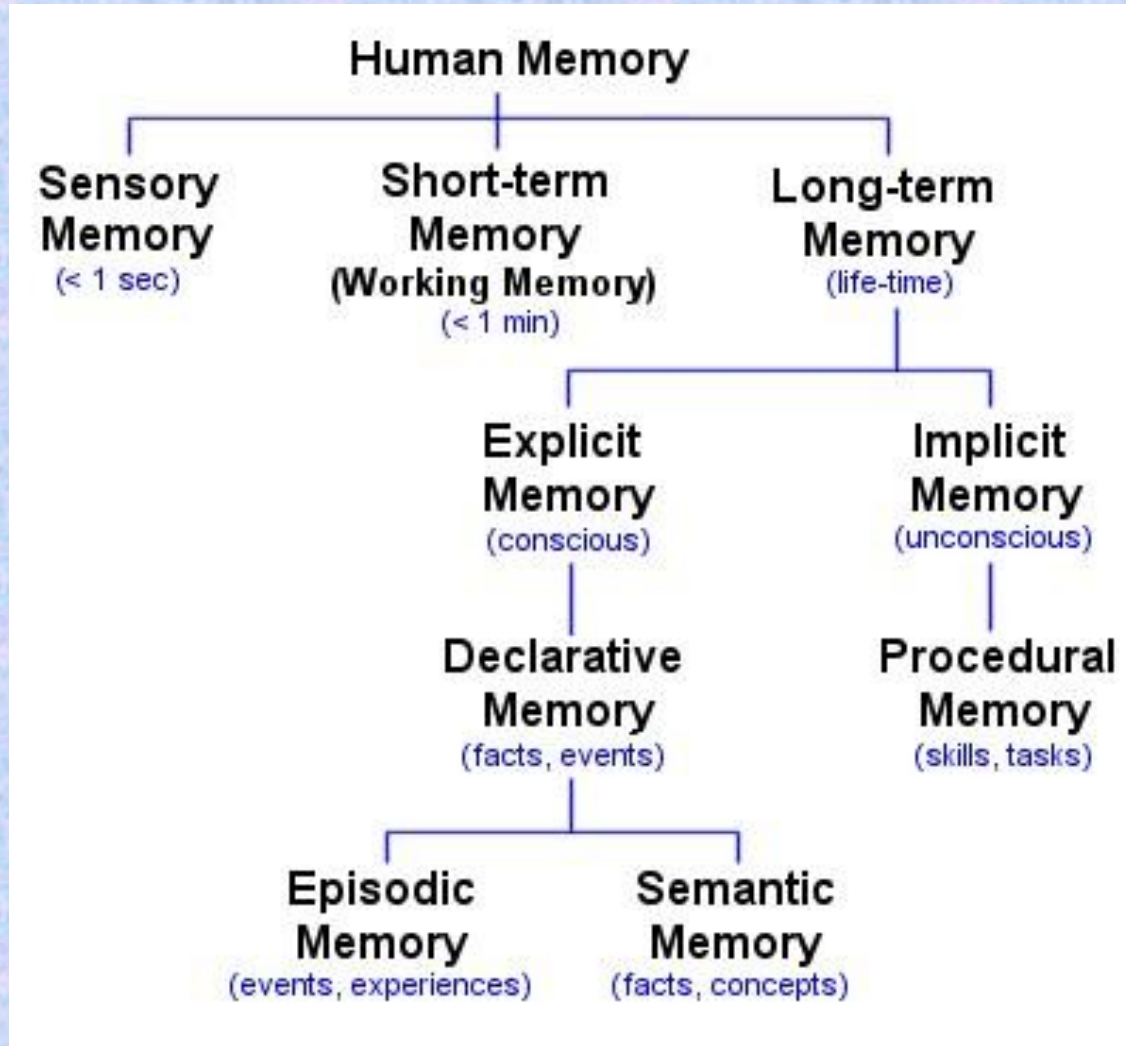
**Technical imagination**

### **3. Memory**

- ability to reproduce past experience; one of the fundamental properties of the nervous system, manifested in the ability to store information concerning bodily reactions and events in the environment and to introduce this information repeatedly into the consciousness and behavior over a long period of time.



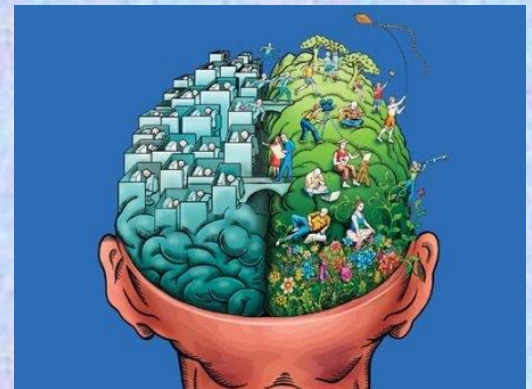
# Types of memory



# Long-term memory

- intended for storage of information over a long period of time.

Despite our everyday impressions of forgetting, it seems likely that long-term memory actually decays very little over time, and can store a seemingly unlimited amount of information almost indefinitely.



# Short-term memory

acts as a kind of 'scratch-pad' for temporary recall of the information which is being processed at any point in time, and has been referred to as "the brain's Post-it note". It can be thought of as the ability to remember and process information at the same time. It holds a small amount of information (typically around 7 items or even less) in mind in an active, readily-available state for a short period of time (up to a minute).





# Sensory memory

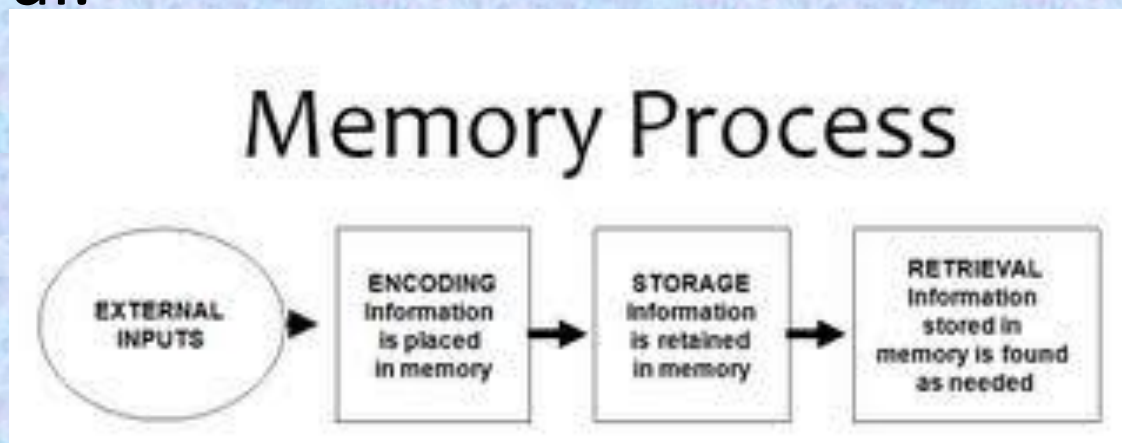
is the shortest-term element of memory. It is the ability to retain impressions of sensory information after the original stimuli have ended. It acts as a kind of buffer for stimuli received through the five senses of sight, hearing, smell, taste and touch, which are retained accurately, but very briefly. E.g., the ability to look at something and remember what it looked like with just a second of observation is an example of sensory memory.





# Memory processes

Memory refers to the processes that are used to acquire, store, retain and later retrieve information. There are three major processes involved in memory: encoding, storage and retrieval.



# Encoding

Encoding is a biological event beginning with perception through the senses. The process of laying down a memory begins with attention, in which a memorable event causes neurons to fire more frequently, making the experience more intense and increasing the likelihood that the event is encoded as a memory.

Emotion tends to increase attention. Only then are the actual sensations derived from an event processed.



# There are four main types of encoding:

**Acoustic encoding** is the processing and encoding of sound, words and other auditory input for storage and later retrieval

**Visual encoding** is encoding images and visual sensory information (which is temporarily stored within the iconic memory)

**Tactile encoding** is the encoding of how something feels, normally through the sense of touch.

**Semantic encoding** is encoding sensory input that has particular meaning or can be applied to a particular context

# Storage

**Storage** is the more or less passive process of retaining information in the brain.

The more the information is repeated or used, the more likely it is to be retained in long-term memory (which is why, for example, studying helps people to perform better on tests). This process of consolidation, the stabilizing of a memory trace after its initial acquisition, is treated in more detail in a separate section.





# Retrieval

**Recall** or **retrieval** of memory refers to the subsequent re-accessing of events or information from the past, which have been previously encoded and stored in the brain. In common parlance, it is known as **remembering**.

During recall, the brain "replays" a pattern of neural activity that was originally generated in response to a particular event, echoing the brain's perception of the real event.



# The two main methods of accessing memory: recognition and recall

**Recognition** is the association of an event or physical object with one previously experienced or encountered, and involves a process of comparison of information with memory, e.g. recognizing a known face, true/false or multiple choice questions, etc.

Recognition is a largely unconscious process.



# Recall

**Recall** involves remembering a fact, event or object that is not currently physically present (in the sense of retrieving a representation, mental image or concept), and requires the direct uncovering of information from memory, e.g. remembering the name of a recognized person, fill-in the blank questions, etc.





# Forgetting

**Forgetting** is temporary or permanent inability to retrieve a piece of information or a memory that had previously been recorded in the brain.

Unlike amnesia, forgetting is usually regarded as a normal phenomenon involving specific pieces of content, rather than relatively broad categories of memories or even entire segments of memory.

