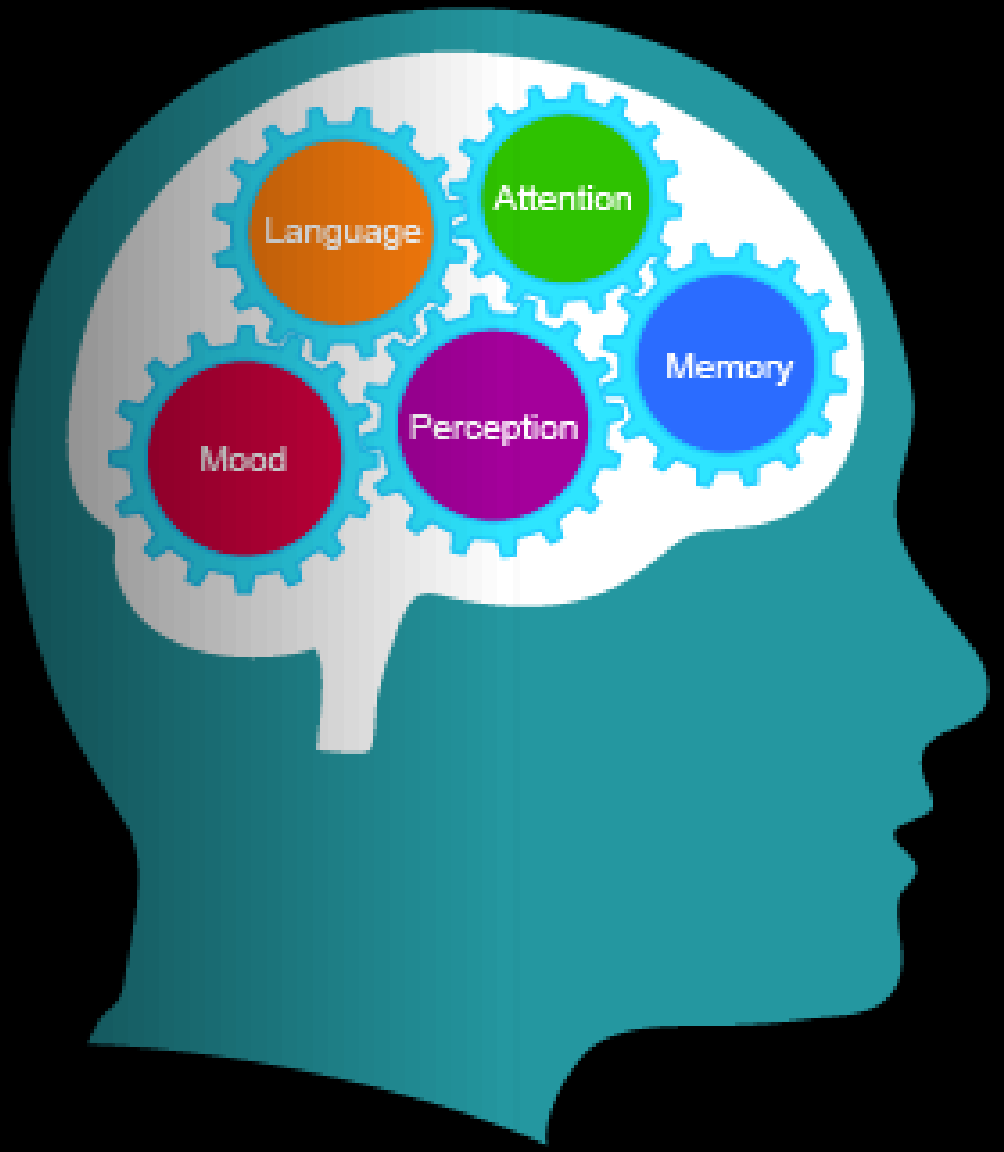
PSY 152 MEMORY AND COGNITION



Learning Objectives

- Definition of memory
- Understanding three kinds of memory
- Understanding the three processes of memory
- Forgetting
- Strategies to improve memory

Challenges to Memory

1. The following are 10 letters. Look at them for 15 seconds. Later in the lecture I will ask you if you can write them on your sheet 1.

THUMSTOFAM

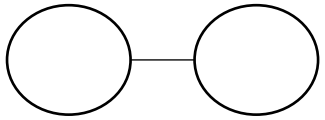
Challenges to Memory

2. Here is another 17 letters look at the list for 60 seconds and then see if you can reproduce them on your sheet 2.

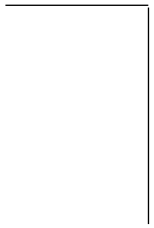
GMC-BSI-BMA-TTC-IAF-BI

Challenges to Memory

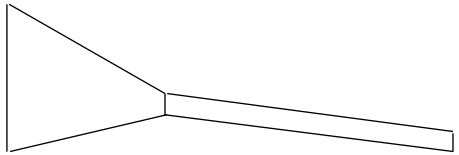
3. Examine the following drawings for 1 minute. Then copy the names of the figures on sheet 3.



eyeglasses



seven



gun

Defining Memory

- Memory is the processes by which information is encoded, stored and retrieved
- Memory can also be defined as the retention of information over time.
- It is also a systematic process of
  - receiving information from the senses
  - Organizing and storing the information and
  - Retrieving the information when needed

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Three Kinds of Memory

- The three kinds of memory include:
- Episodic memory: memories of events experienced by a person or that take place in the presence of the person. e.g., memory of your birthday
- Semantic memory: a generalized knowledge which concerns meaning. e.g., remembering that Ghana has 16 regions without visiting all these regions.
- Procedural memory also know as skill memory: knowledge of doing things e.g., how to ride a bicycle

The Three Processes of Memory

- Basically, psychologists study how information is:
  - Encoded: getting information into memory
  - Stored: maintaining information in memory
  - Retrieved: getting information out of memory

The Three Processes of Memory

- Encoding: the first stage of information processing
  - Modifying information so that it can be placed in memory.
  - Encoding transform information into psychological format for mental representation

The Three Processes of Memory

- Encoding: the first stage of information processing
  - Encoding involves:
    - Visual code: mental representation of information as a picture
    - Acoustic code: mental representation of information as a sequence of sounds
    - Semantic codes: mental representation of information according to its meaning

The Three Processes of Memory

- Encoding: the first stage of information processing
- Consider the word

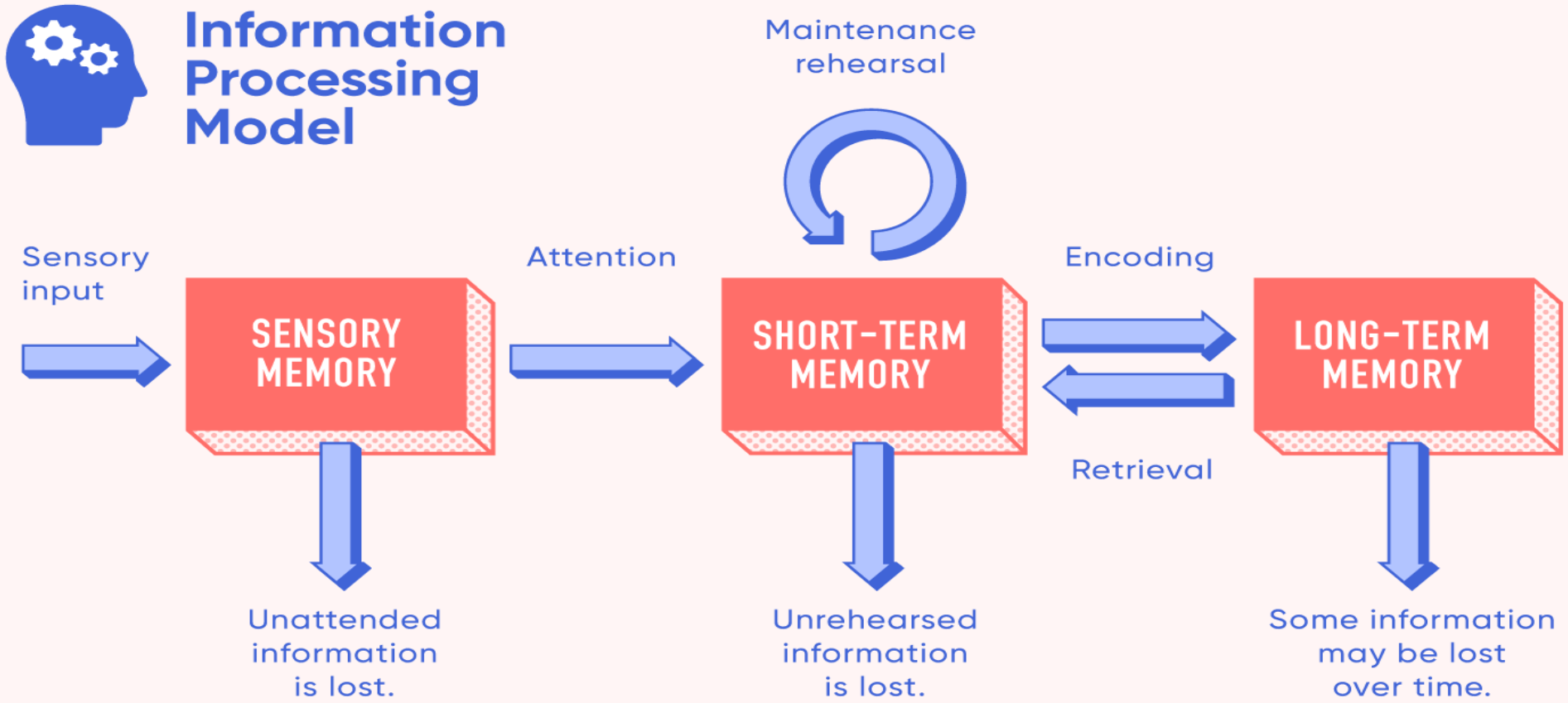
PRETTY

1. How do you see the image of the word ?
2. How does it pronounce or sound?
3. What does the word mean?

The Three Processes of Memory

- Storage: the second stage of information processing
  - The maintenance of information over time.
  - Information passes through three distinct stages in order to be stored in long term memory (Atkinson & Shiffrin model of memory)

Information Processing Theories



The Atkinson & Shiffrin model of Memory Storage

The Three Processes of Memory

- Sensory Memory (SM): Memory system which holds information briefly.
  - First step of processing stimuli from the environment
  - Limited duration to store information
  - Unimportant information is discarded
  - Important information is moved to short-term memory for further processing.

The Three Processes of Memory

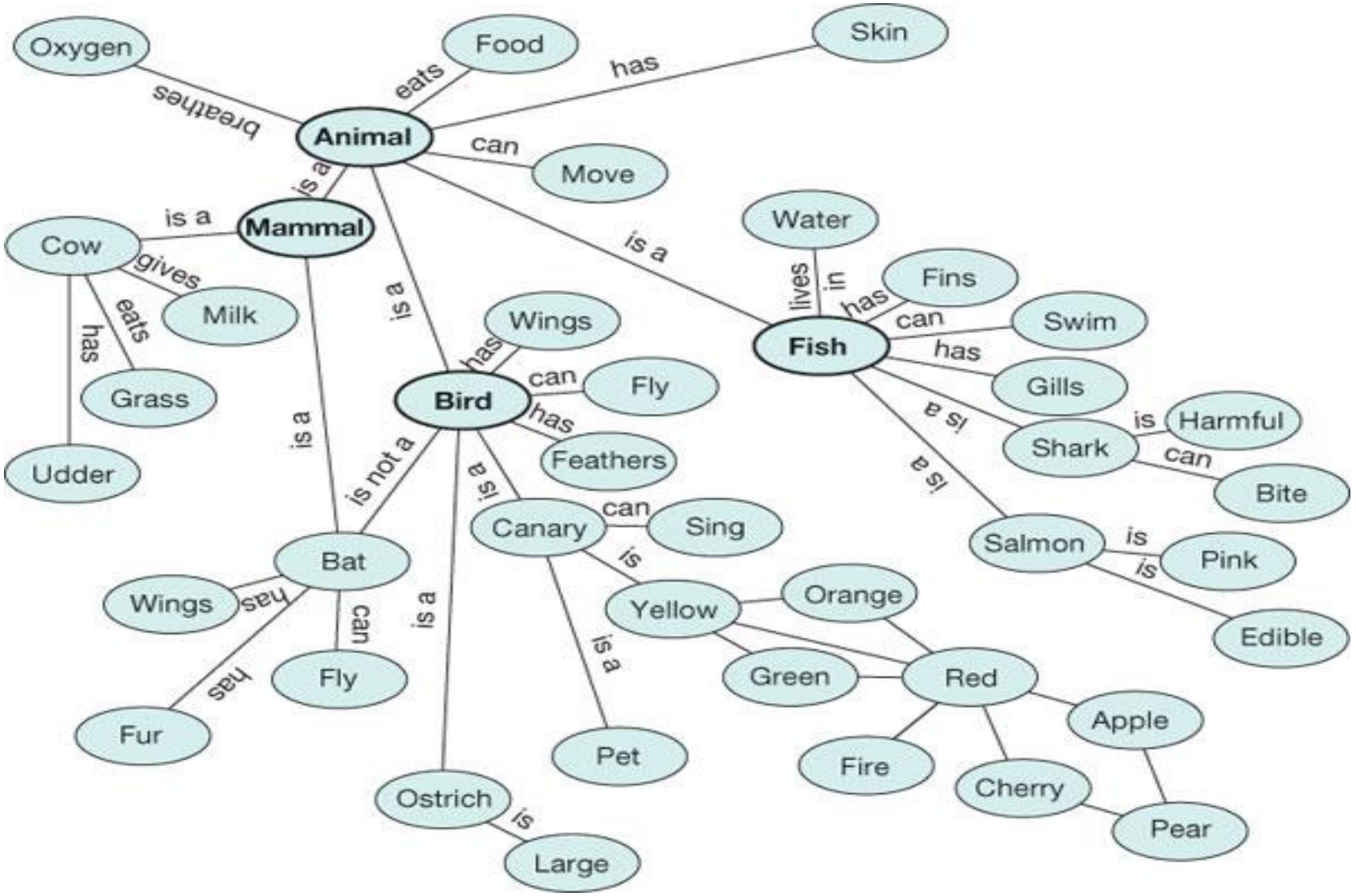
- Short-term memory (STM): also referred to as working memory, temporary holds information to be transferred to long term memory.
  - Limited duration is about 20 seconds e.g., remembering a phone number
  - Limited capacity: memory spans 7 items +/-2 (Miller, 1956)
  - Also used to hold information retrieved from long-term memory for temporary use

The Three Processes of Memory

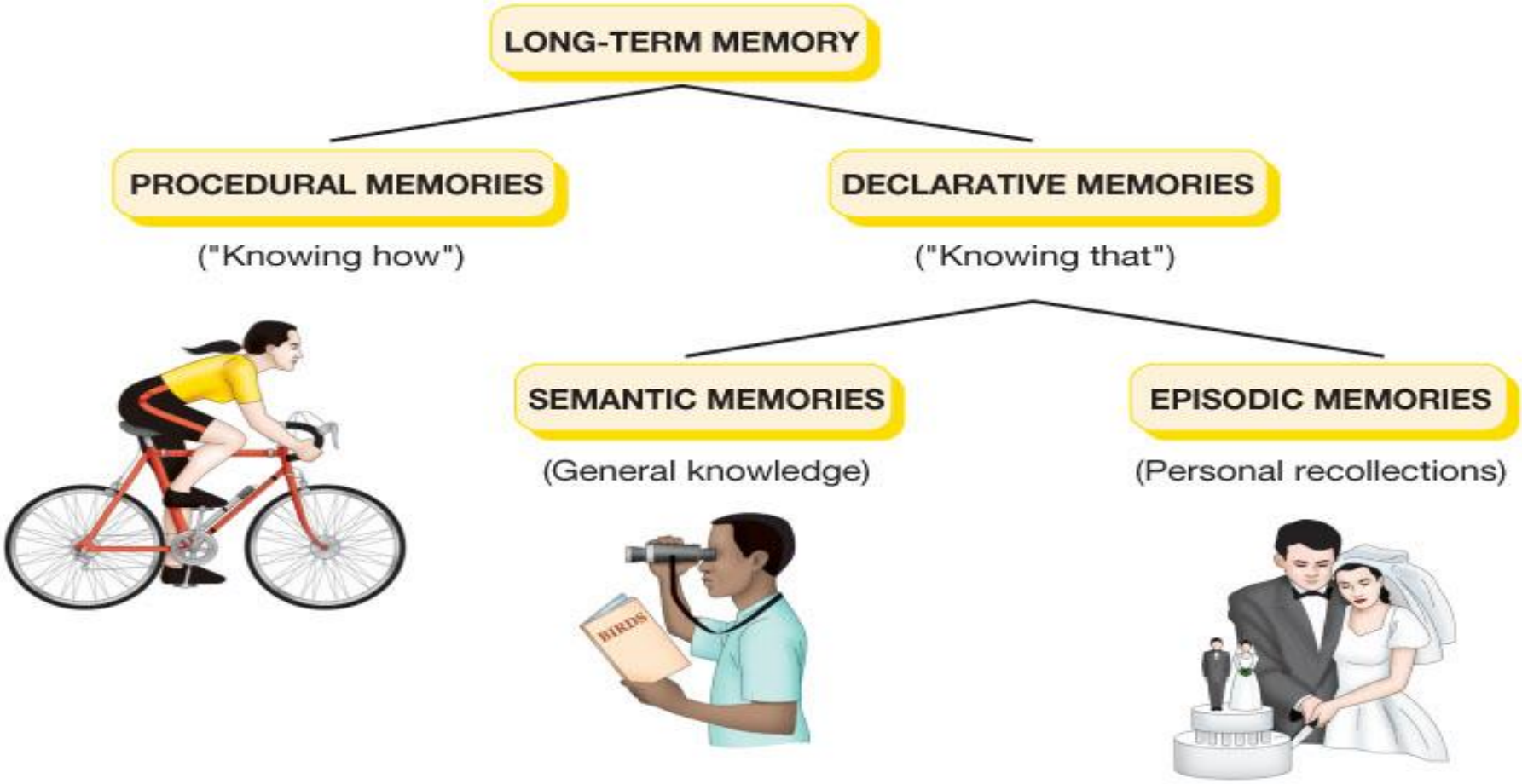
- Long-term Memory (LTM): Memory system capable of relatively permanent storage of information.
  - It has unlimited duration
  - It has unlimited capacity
  - Organisation of information in LTM is mainly semantic

- Semantic network model. Much of the organisation of LTM depends on networks of associations among concepts.

- Activation of one word spreads to another



Types of Long-Term Memory (LTM)



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Types of Long-Term Memory (LTM)

- Declarative (explicit) memory: memories of facts events which can be consciously remembered, recalled and declared
- Declarative includes:
  - Semantic: facts and general knowledge e.g., 25th Dec. is X'mas
  - Episodic: events experienced personally e.g., remembering your birthday celebration

Types of Long-Term Memory (LTM)

- Procedural (implicit) memories which is formed through behaviours i.e., storing information about how to do things

e.g., how to ride a bike, drive

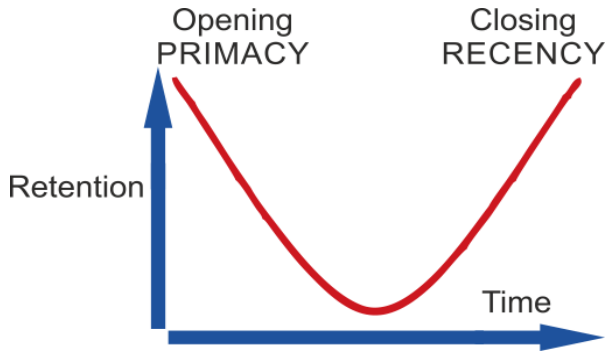
Relationship between STM & LTM

- Rehearsal helps bring information from STM to LTM
  - Types of rehearsals
    - Maintenance rehearsals: mental repetition of information in order to keep it in memory e.g., remembering phone number (0554571894)
    - Elaborative rehearsal: increasing retention of new information by relating it to information that is well known.

Relationship between STM & LTM

- Serial-position effect: the tendency to recall more accurately the first and last items in a series
  - It involves:
    - Primacy effect: the tendency to recall the initial items in a series of items
    - Recency effect: the tendency to recall the last items in a series of items

  e.g., meeting a group of new friends, examination revision



Relationship between STM & LTM

- STM uses materials in the LTM to understand information
  - Chunking: tendency of grouping similar stimuli for storage as a single unit in order to recall

e.g., FUSTUNMASTIBUC

FUST-UN-MASTI-BUC

The Three Processes of Memory

- Retrieval: the third stage of information processing
  - The location of stored information and its return to consciousness
  - Retrieval is needed for everyday functioning e.g., knowing how to drive to work, retrieving information to produce answers in exams.

Your Turn

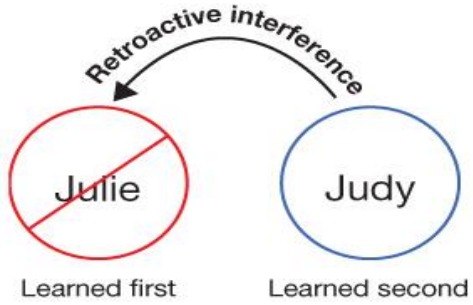
Why do we forget?

Why do we forget?

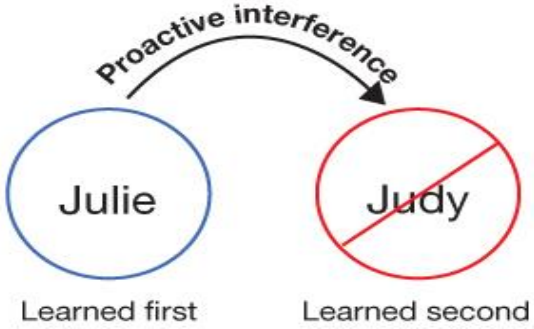
- Forgetting: refers to a loss of information from long term memory
  - Ineffective encoding: when the information is never stored in the first place e.g., lack of effort and attention.
  - Decay theory: information in memory tend to fade with time if it is not accessed
  - Replacement theory: The theory that new information entering memory can wipe out old information.

Why do we forget?

- Interference theory: competing information, i.e., we may forget stored information because other learning interferes with it.
  - Retroactive interference: forgetting that occurs when recently learned material interferes with the ability to remember similar material stored previously.



  - Proactive interference: forgetting that occurs when previously stored material interferes with the ability to remember similar, more recently learned material.



Why do we forget?

- Repression – The partial or complete loss of memory of important personal information
  - Psychogenic amnesia – The causes of forgetting are psychological, such as the need to escape feelings of embarrassment, guilt, shame, disappointment.
  - Traumatic amnesia – The forgetting of specific traumatic events, sometimes for many years
  - Dissociative amnesia – amnesia thought to stem from psychological conflict
  - Infantile amnesia – inability to recall events that occur during the first 2 or 3 years of life.

Strategies to improve memory

Mnemonic devices – memory aids that help us organize information for encoding.

Adequate rehearsals – Rote repetition of material in order to maintain its availability in memory

Chunking – organizing information into manageable bits or chunks.

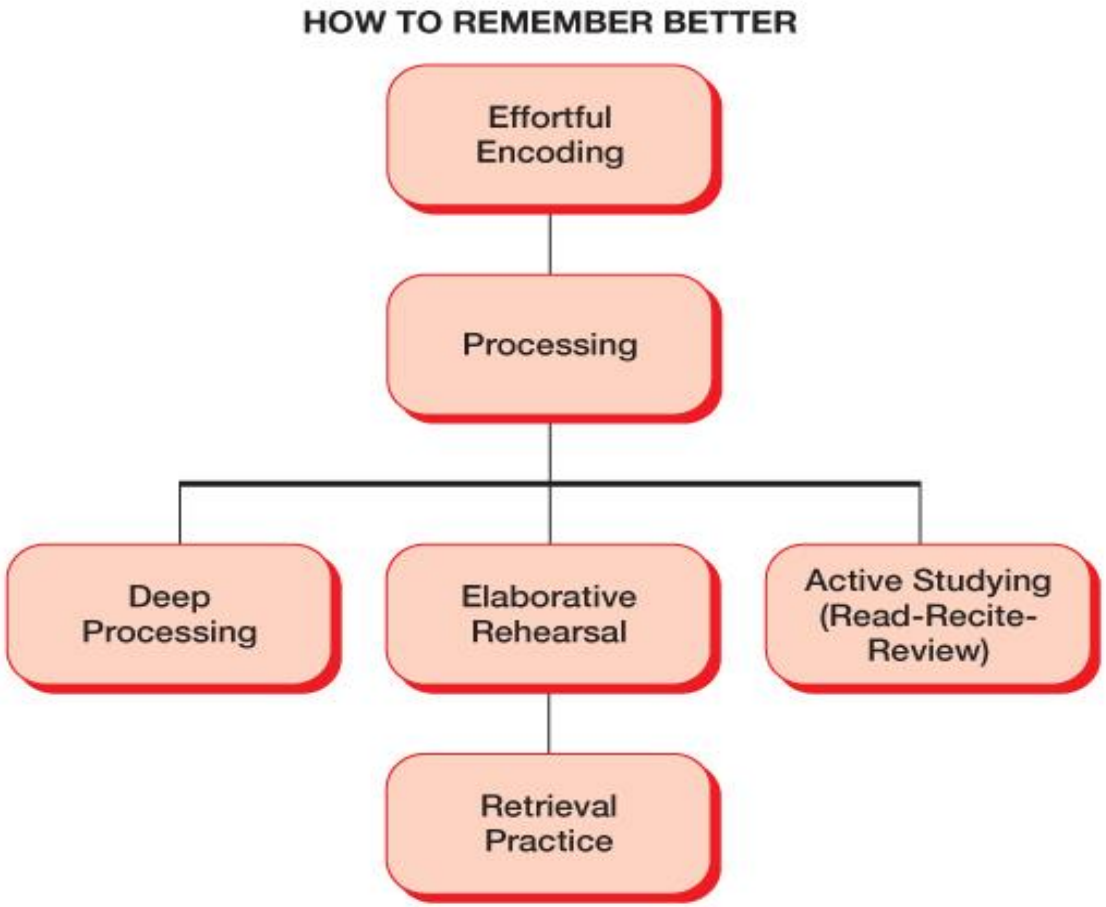
E.g., grouping phone numbers into 3 chunks

Strategies to improve memory

Deep processing – In the encoding of information, the processing of meaning rather than simply the physical or sensory features of a stimulus

Read, recite, review – An active process that has been shown to enhance study efforts and help with longer-term retention of material

How to Remember Better



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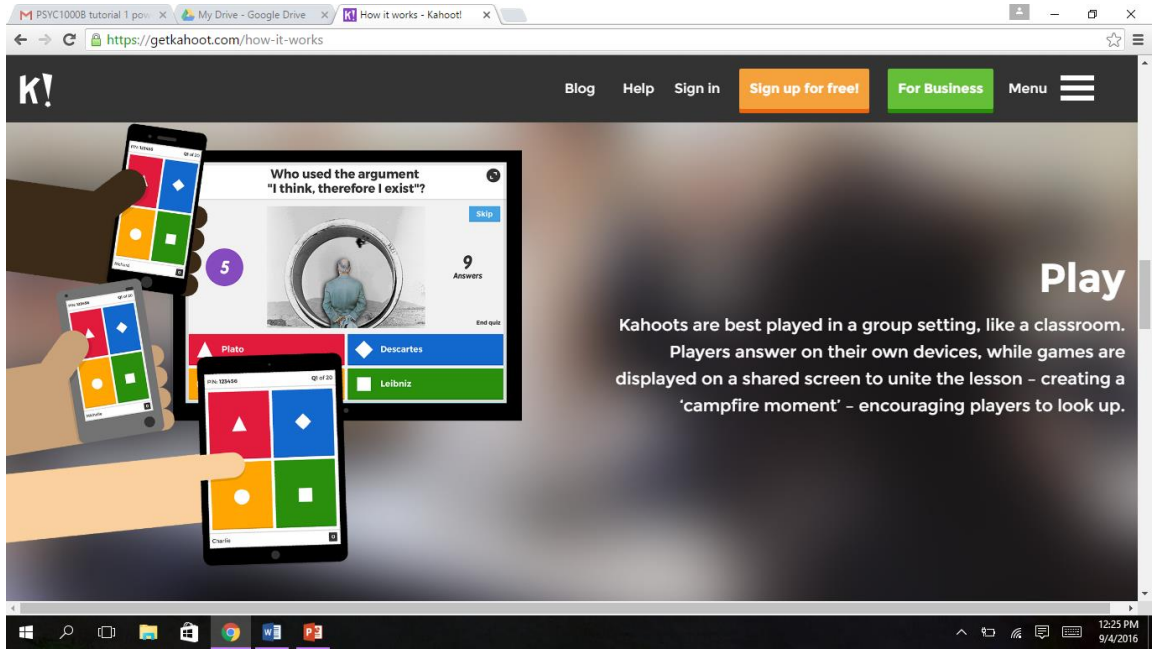
Kahoot!
Game pin
Enter


https://getkahoot.com/how-it-works
Blog
Help
Sign in
Sign up for free!
For Business
Menu
Who used the argument "I think, therefore I exist"?
Skip
9
Answers
5
Plato
Descartes
Leibniz
Play
Kahoots are best played in a group setting, like a classroom. Players answer on their own devices, while games are displayed on a shared screen to unite the lesson – creating a 'campfire moment' – encouraging players to look up.
12:25 PM
9/4/2016

Mini Quiz