MEMORY

Definition

- **Memory:** The capacity to acquire, retain and recall knowledge and/or skills

- **Amnesia:** A partial or total loss of memory

Three Basic Processes

1. **Encoding:** processing of information into the memory system, readying it for storage.

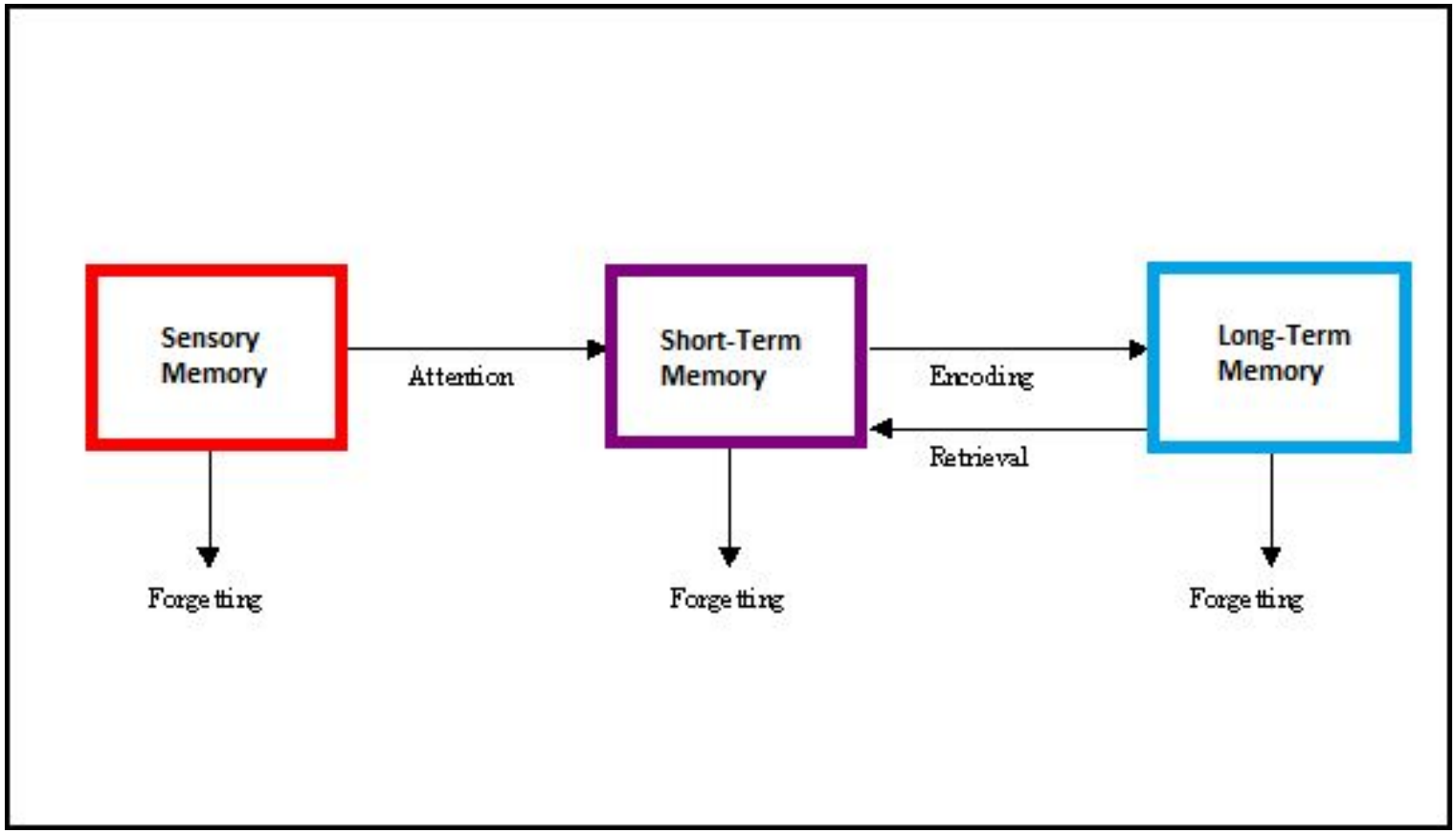
2. **Storage:** the retention of encoded information over time

3. **Retrieval:** the recalling of information from storage – continuous process

Three Levels of Memory

1. Sensory Memory
2. Short-Term Memory
3. Long-Term Memory

Diagram


Sensory Memory
Attention
Short-Term Memory
Encoding
Retrieval
Long-Term Memory
Forgetting
Forgetting
Forgetting

Sensory Memory

- Receives information from the environment from the 5 senses
- Extremely large capacity
- Stores information for only fraction of a second

Selective Attention enables us to focus on relevant information that comes in through our sensory memory

Short-Term Memory

- Also called **"working memory"**
- Limited in duration and capacity
  - Holds approximately 7 pieces of unrelated information at one time
  - Can store information for up to15-20 seconds.

Chunking information into meaningful groups can improve the ability to recall it from the short-term memory.

Maintenance Rehearsal is often necessary to keep information in short term memory for more than a few seconds.

Sensory Memory

You will have 5 seconds to study the pictures. Try to fill in as many boxes as you can.

Short-term Memory

You will have 1 minute to study the pictures. Try to fill in as many boxes as you can.

Strategies

- When you were given more time to study the picture what strategies did you use to fill in your boxes?
  - Chunking
  - Mnemonic devices
  - Rehearsal
  - Meaningful Association

Consolidation

- Short-term memories are stored in long-term memory through **rehearsal** and **meaningful association**

- Long term memories take the form of
  - **Explicit** – memory of facts and experiences that are declarative in nature
  - **Implicit** – memory of skills and actions that do not require conscious recall

Long-Term Memory

- Essentially limitless capacity
- Information can be stored indefinitely
- We may not always be able to **RETRIEVE** the information from our long-term memory

Stages of Memory Summary

	Sensory	Short-Term	Long-Term
Capacity	All input from the senses (very large)	7 pieces of information	Limitless
Duration	Fraction of second	15-20 seconds	Can be stored for a lifetime if maintained
Example	Seeing something for an instant then having to recall it	Looking up a telephone number	Recalling a childhood memory

Types of Long-Term Memories

- **Episodic**
  - Ability to remember events from the past
  - Ex) memory of your own life

- **Semantic**
  - Knowledge of how the world works
  - Ex) language, rules, words, meanings

Types of Memory

- **Procedural**
  - Memory of how to do things
  - Learned skills that do not require conscious recollection

- **Declarative**
  - Memory of knowledge that can be called forth consciously as needed

Example

Jim and Jeff talking about what kind of pet to get. As they toss around ideas Wilson wants to get a black cat, but Jeff wants to get a golden retriever. Both can call up images of what cats and dogs, and different breeds, look like.

Example

Wilson is an all star volleyball player at Sturgeon. When he is in games he can pass, set, and hit without having to think about it.

Example

Mary is taking a math test. As he gets to a question he is able to recall the work they did in class and understands how to solve each question.

Example

Laura went on a vacation with her family to Orlando, Florida last summer. Now, as winter gets colder she looks back on that vacation and remembers the florida heat.

Forgetting

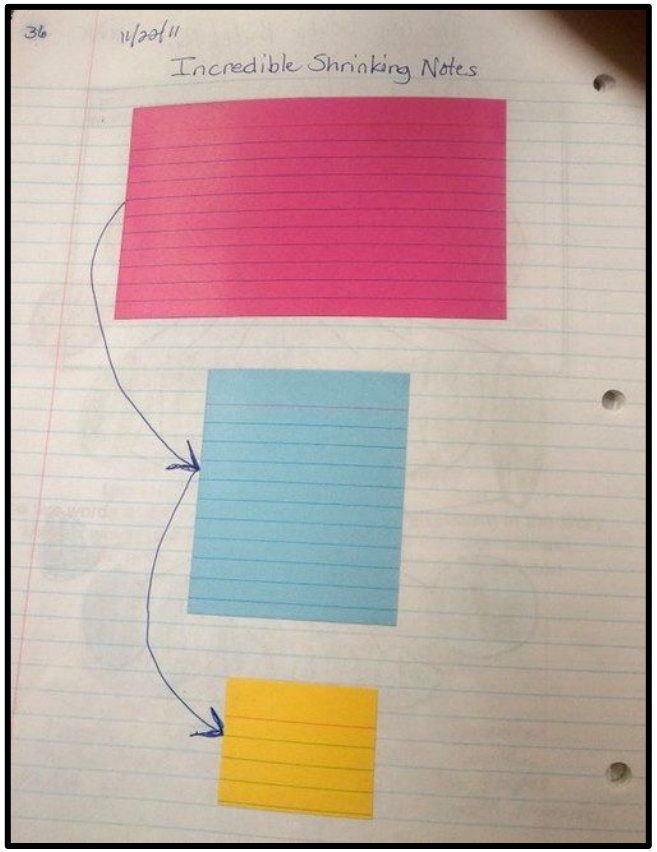
- Can occur at any stage of memory
  1. **Encoding failure**
     - Lack of attention
     - Never enters long-term memory
  2. **Retrieval failure**
     - Interference
     - Retrieval cues, motives
  3. **Storage decay**
     - Physical decay
     - Motivated forgetting

Improving Memory

- Study repeatedly to boost recall
- Critical thinking trumps “skimming”
- Make it meaningful
- Appeal to multiple senses
  - visuals, music…
- Use mnemonic devices
- Activate retrieval cues
  - recreate situation of learning
- Test yourself

5 R's of Note Taking

- Record
- Reduce
- Recite
- Reflect
- Review



SQ3R Reading

- Survey
- Question
- Read
- Recite
- Review