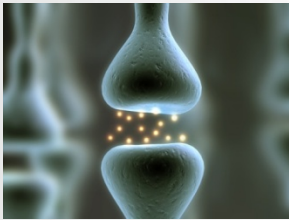


New Teacher Academy

Far West GREAT Center



Memory and Learning

December 12, 2009

Presenter: Barbara Baird

915.566.7900

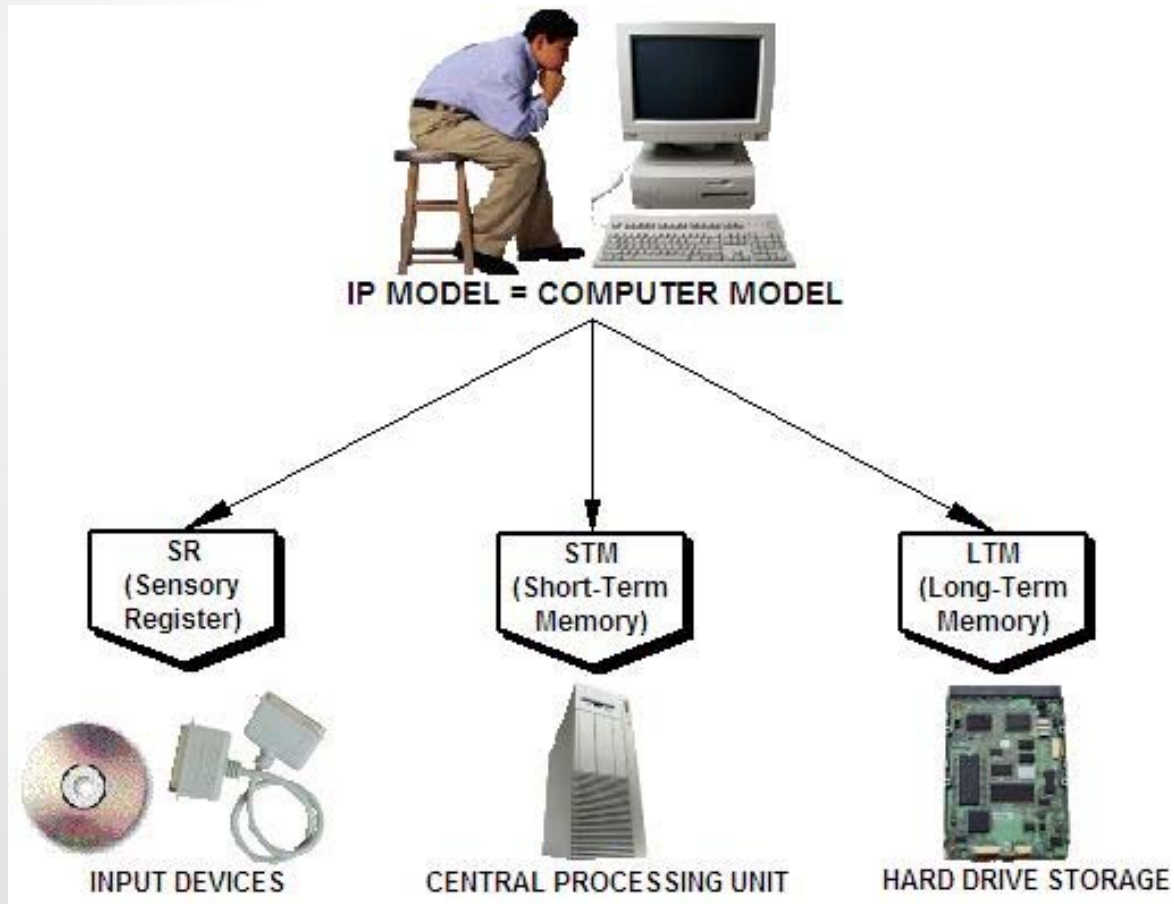
B-Baird@att.net



3 Types of Memory

- ▶ **Sensory** – Information gathered from the 5 senses. Lasts 3–5 seconds.
- ▶ **Short term** (working) – A system for temporarily storing and managing information. Holds 5–9 chunks or pieces of information for a short amount of time.
- ▶ **Long term** – A system for permanently storing, managing, and retrieving information for later use. Information may be available for a lifetime. Stored on the basis of meaning and importance.

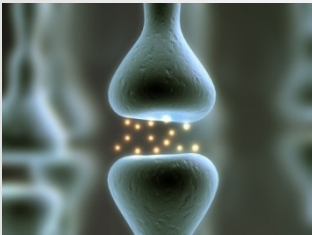
3 Types of Memory



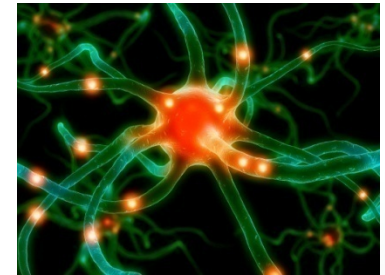
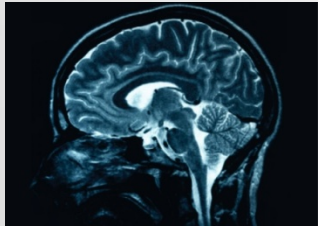
http://projects.coe.uga.edu/epltt/index.php?title=Information_processing

Long-term Memory

▶ Consists of information you have:



- *Heard often*
- *Seen often*
- *Used often*
- *Deemed necessary*



Cornerstone: Building on Your Best by Robert M. Sherfield, Rhonda J. Montgomery, Patricia G. Moody. Pearson/Prentice Hall, 2005

Forgetting Curve

- ▶ There are many reasons we forget things.
- ▶ One reason is that information that is not used for an extended period of time decays or fades away over time.
- ▶ Humans tend to halve their memory of newly learned knowledge in a matter of days or weeks unless they consciously review the learned material.
- ▶ The forgetting curve illustrates the decline of memory retention in time.

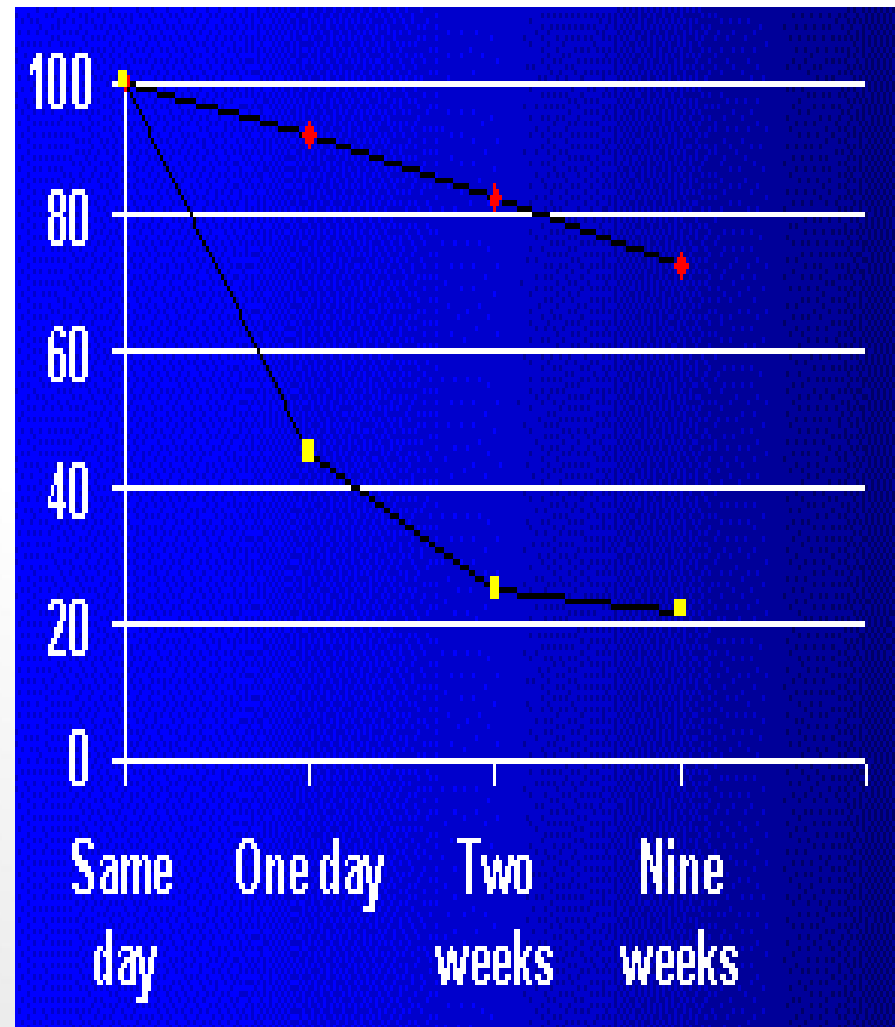
Forgetting Curve

Amount you are likely to recall if you do review

vs.

Amount you are likely to recall if you do not review

<http://www.ucc.vt.edu/lynch/SSFForgetting.htm>



Forgetting: 1 hour lecture

- ▶ Here's the formula for remembering material:

Within 24 hours of getting the information – spend 10 minutes reviewing and you will raise the curve almost to 100% again.



- ▶ A week later (Day 7), it only takes 5 minutes to "reactivate" the same material, and again raise the curve.
- ▶ By Day 30, your brain will only need 2-4 minutes to give you the feedback, "Yes, I know that..."

University of Waterloo Counseling Services
<http://www.adm.uwaterloo.ca/infocs/study/curve.html>

Increasing Memory Power

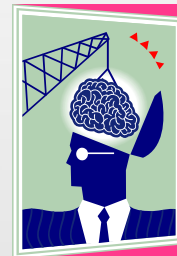
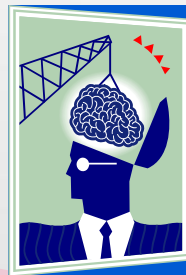
- ▶ A related concept is the strength of memory that refers to the durability of memory in the brain. The stronger the memory, the longer we can remember it.
- ▶ Strategies that engage the brain strengthen memory.



20 Professional Learning Strategies

"Sit and Get" Won't Grow Dendrites by Marcia L. Tate

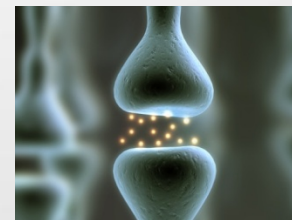
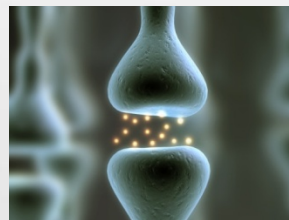
- ▶ Brainstorming & discussion
- ▶ Drawing and artwork
- ▶ Field trips
- ▶ Games
- ▶ Graphic organizers
- ▶ Humor & celebration
- ▶ Manipulatives & models
- ▶ Metaphors, analogies, & similes
- ▶ Mnemonic devices
- ▶ Movement
- ▶ Music, Rhythm, & Rhyme
- ▶ Project and problem-based instruction
- ▶ Reciprocal teaching, cooperative learning, & peer coaching
- ▶ Role-plays, drama, pantomimes, & charades
- ▶ Storytelling
- ▶ Technology
- ▶ Visualization
- ▶ Visuals
- ▶ Work study & action research
- ▶ Writing & reflection



Thinking About Learning *Theory*



- ▶ Prepare students for learning
 - Advance Organizer
- ▶ Connect new information to what learners already know
- ▶ Vary the way information is presented or obtained
- ▶ Have students review or rehearse information

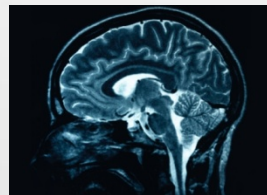


Thinking About Learning *Theory*

- ▶ Have students process – think about and use – new information
- ▶ Provide students with assistance when needed
- ▶ Help students summarize what is learned
- ▶ Help students apply what is learned



Source: *The Art of Teaching* by Donald R. Cruickshank, Deborah Bainer Jenkins, Kim K. Metcalf. McGraw-Hill, 2009.

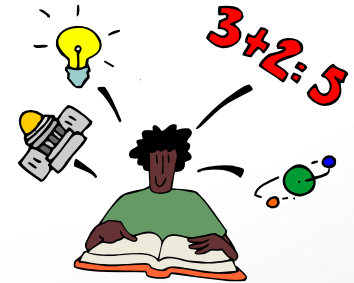


Thinking About Learning *Theory*



Students

- ▶ Remember best what happens at the beginning and ending of class
- ▶ Learn most efficiently in 20-minute segments
- ▶ Are often tired when they come to class
- ▶ Want some control over their learning
- ▶ Will resist being forced, judged, or embarrassed into doing things



Source: *The New Teacher of Adults* by Michael Brady and Allen Lampert. New Teacher Concepts, 2009.