



INFORMATION PROCESSING

*Knowledge and
Experiences*

What is Information Processing?

The degree with which you...

- Build bridges between knowledge you already have and new knowledge you wish to acquire
- Build bridges between your past experience and new knowledge

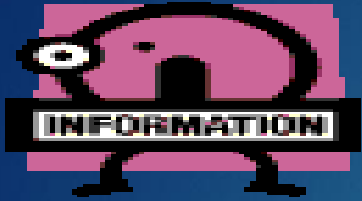


STUDENTS WHO DO NOT PROCESS NEW INFORMATION WELL



- Students who do not process information well may not use effective learning strategies for achieving their goals.
- They may have difficulty learning and remembering new information being studied.
- They may find that they spend a lot of time going over class materials and readings, but they have problems remembering what they studied when they need to use it for tests or other assignments.
- Students who do not process information well may feel as though all of the information runs together or is jumbled in their mind.
- They may not be sure how different bits of knowledge relate to each other.



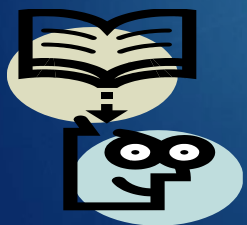


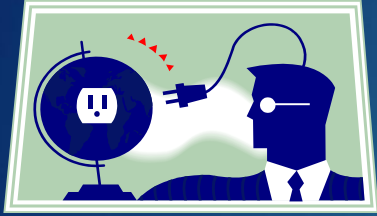
- They may have a hard time learning new material or demonstrating what they know. They may get frustrated or anxious about low grades on college assignments and tests.
- Students who do not process information well often spend more time studying but with much less pay-off for their time and efforts. The goal in college is not necessarily to study "hard" — the goal is to study "smart!" Knowing effective and efficient information processing strategies and techniques is crucial for college success. They are valuable in helping you reach your academic and life goals.



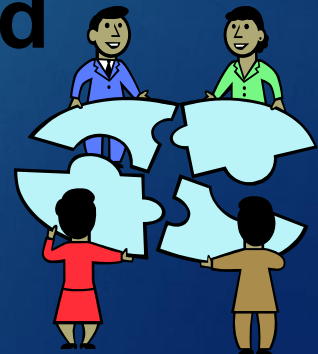
Questions to Ask Yourself As you Study this Module

- ▶ Do you have trouble recalling information...
- ▶ What type of strategies do you use for learning new material
- ▶ Do you use different information processing strategies depending on your goals and the academic tasks that you are required to complete

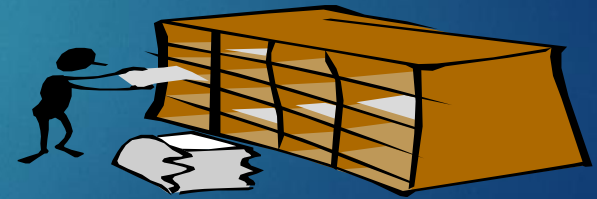




- Do you make connections between the knowledge that you already have and the new knowledge you want to gain
- Are you mentally active during a learning task or do you expect information to stay in your head



- ▶ Do you organize new information so that it makes sense to you?
- ▶ Do you find it difficult to learn in classes of which you have very little prior knowledge?





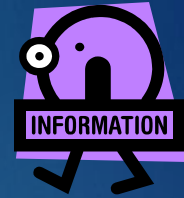
COLLEGE STUDENTS WHO PROCESS INFORMATION WELL

- Students who process information well use learning strategies that help them achieve their academic goals.
- They make new information meaningful to themselves and organize new knowledge so that they can understand it and recall it when needed.
- They have a variety of strategies and skills to help them learn.
- Students who process information well tend to find it easier to acquire new knowledge and skills.
- They actively try to connect new information with what they already know and with their experiences.
- Students who process information well usually perform better on tests or other learning assignments. They store the new knowledge in memory in such a way that it is easier to access and recall.



Information Processing is about...

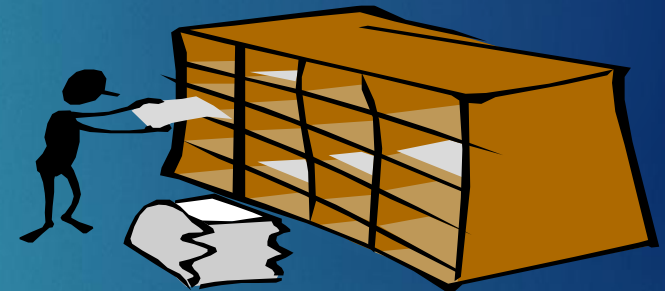
- ▶ How you make new information meaningful to you



How can I apply this new info?

- ▶ How well you organize new knowledge

- a. In order to understand it
- b. To recall it when needed...



- ▶ Having different strategies to make information meaningful to you



Points to Remember about Information Processing

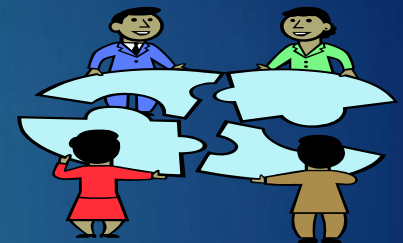
To learn and understand new information, you must use strategies that help you construct your own meaning...

▶ Simple Repetition or memorization

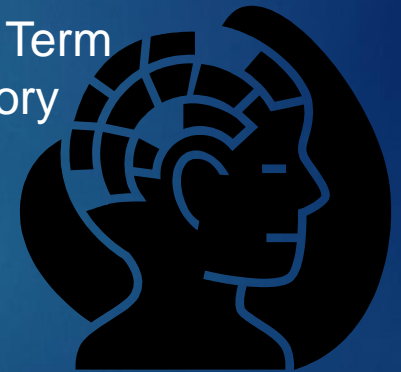
▶ Storing in Long-Term Memory

a. Do something with or change

b. Requires making connections between the new knowledge and your existing knowledge



Long Term
Memory



Connecting the
new with the
old!!!!

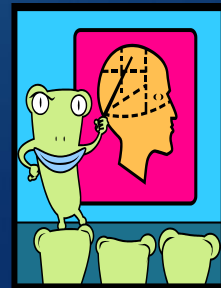
Activity

How Long Do I Want To Retain The Information?

Short-Term vs Long-Term

Short-Term Memory

- ▶ A limit to the continuum
- ▶ New learning pushes old learning out of STM
- ▶ Lose it before we need it
- ▶ Blanking out or forgetting answers while taking the exam
- ▶ Not recognizing memorized material if is arranged differently on the exam
- ▶ Forgetting the answers right after the exam
- ▶ Having difficulty applying the information to new situations



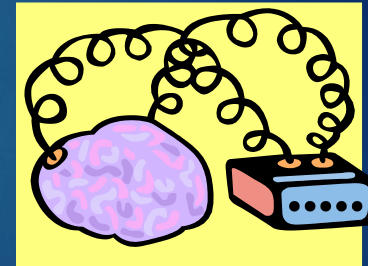
Longer-Term Memory

Making the Information Meaningful

Processing New Information more Deeply, gets it into longer-term memory

Examples of Longer-Term Memory

- ▶ Knowing how to answer essay questions on a test
- ▶ Your parent's anniversary
- ▶ Knowing how to play a sport
- ▶ Your favorite foods
- ▶ Knowing how to add, subtract, multiply, etc
- ▶ Your good friends' names



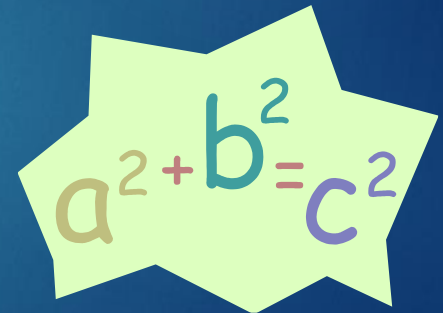
$$a^2 + b^2 = c^2$$

Strategies for Learning Information

- ▣ Active rehearsal strategies

Used for putting information into Short Term Memory only

1. Using mnemonic (a pattern of letters, ideas, or associations that assists in remembering something)
2. Repeating key terms aloud
3. Copying material
4. Using note cards

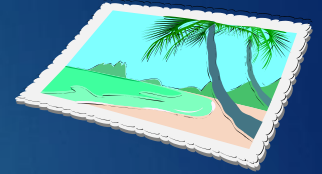

$$a^2 + b^2 = c^2$$



Elaboration Strategies

Help you make information more meaningful and move it into

Long Term Memory



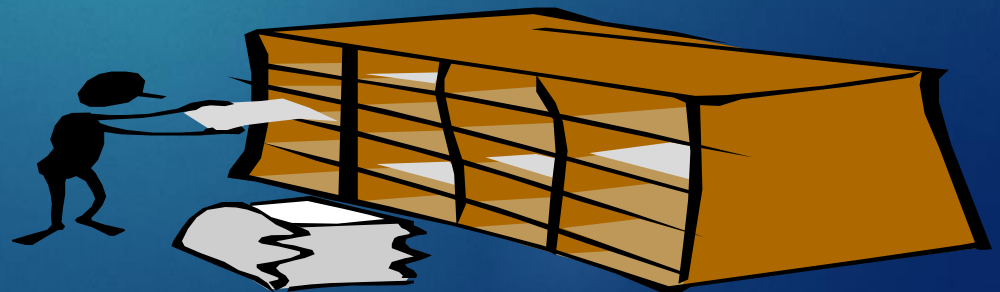
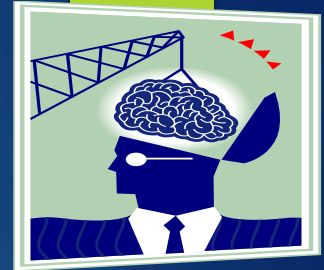
- ▶ Associating new material with prior knowledge (connecting the old with the new)
- ▶ Forming mental images for associations you generate
- ▶ Paraphrasing/Summarizing
- ▶ Creating Analogies (cold is to winter like hot is to _____)
- ▶ Creating and answering questions about the material
- ▶ Applying knowledge in new situations
- ▶ Teaching someone else the material



Organizational Strategies

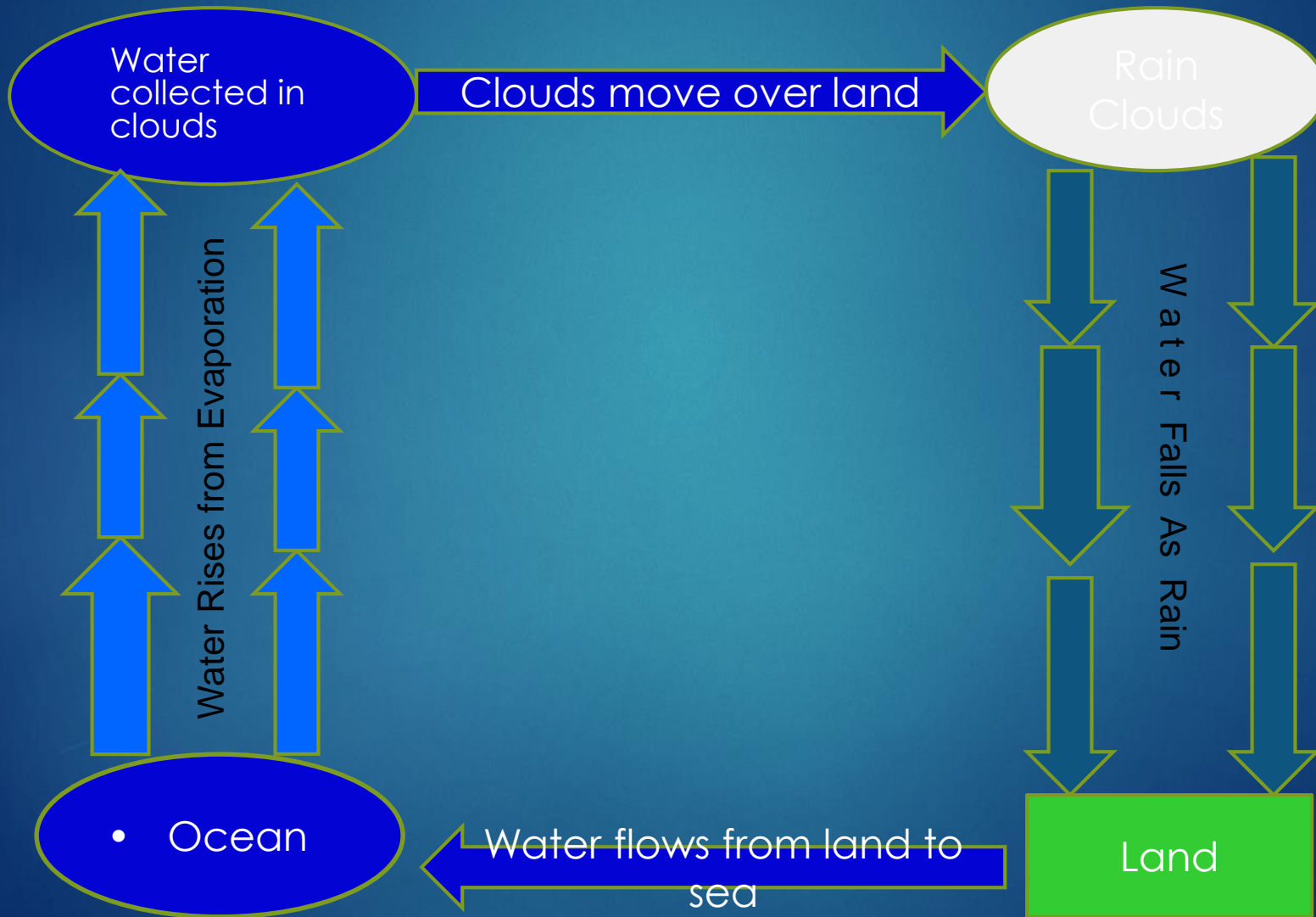
Are aimed at getting information into longer-term memory. This makes it possible to change or transform the material in a way it makes sense to us thus making it easier to remember. Some strategies:

- Dividing the material into meaningful parts
- Identifying hierarchical relationships within the material
- Diagramming and outlining the information
- Classifying or categorizing the material



EXAMPLE

DIAGRAMMING AND OUTLINING INFORMATION





Some Strategies To Help Improve your Information Processing

- Go over what you have read or heard with another student and try to explain it
 - Think of ways in which you could use the information that you are studying now or in the future
 - Ask yourself questions about the material you are trying to learn and try to answer those questions
 - Try to make a drawing, picture, or outline of the material you are studying
 - Ask your teacher or counselor for help in developing knowledge acquisition strategies that will help you organize information and make it meaningful as you are studying
- Check out some of the books, self-help materials, or programs available to help you learn how to use information processing strategies

An Exercise In Constructing Knowledge

You have 15 seconds to memorize each of the words listed below.

BED
NIGHT
DREAM
SNORE
REST
PAJAMAS
BLANKET
NAP
TIRED
PILLOW
YAWN
ALARM

Sit quietly for 20 seconds.

Do not write anything.

This pause is part of the exercise. After you have paused for 20 seconds proceed to the next slide.

An Exercise In Constructing Knowledge

cont.

Write as many of the words as you can recall. Don't worry about guessing. When you have written all the words you can remember proceed to the next slide.

An Exercise In Constructing Knowledge

cont.

- Did you list the word "BED?"
- How about the word "REST?"
- Or, the word "TIRED?"
- Did you remember the word "SLEEP?"
- Many times people remember the word "SLEEP" being on the list even though it is not. Did you? What would make someone think that the word "SLEEP" was on the list? Probably because the words that are on the list are all related to the concept of **sleep**.
- This is what we mean when we say the process of learning involves actively making the information meaningful. We do not passively receive information from our teachers and textbooks or from our own thinking. We add to, we change, we **construct** our own knowledge, whether we realize it or not. The more we know about how to do that, the more successful we will be with a variety of learning demands.
- With this activity, many people make the list of words meaningful by thinking about what the objects and activities on the list had in common with each other. The word "sleep" was not on the list, but thinking about sleep could help you remember the words that were on the list.