

Metacognition: The Key to Acing Courses (and everything else)!

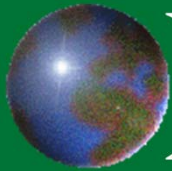
Sandra Y. McGuire, Ph.D.
Retired Assistant Vice Chancellor
Professor, Department of Chemistry
Director Emerita, Center for Academic Success
Louisiana State University



*2004 National College Learning Center Association
Frank L. Christ Outstanding Learning Center Award*

N C L C A





Delta State University Academic Resources

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Academic Support and Developmental Studies

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What are study skills workshops?

Spring 2012



STUDENT SUCCESS CENTER

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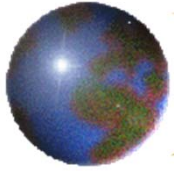
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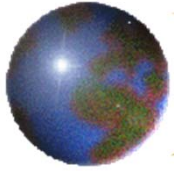
*Presidential Recognition
White House Oval Office
November 16, 2007*





The Story of Three Students

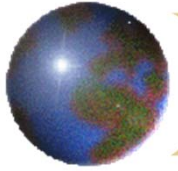
- ✦ Travis, junior psychology student
47, 52, 82, 86 B in course
- ✦ Joshua, first year chemistry student
68, 50, 50, 87, 87, 97, 90 (final) A in course
- ✦ Dana, first year physics student
80, 54, 91, 97, 90 (final) A in course



How'd They Do It?

They became expert learners
by using ***metacognition!***

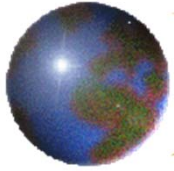
They studied to LEARN,
not just to make the grade!



Reflection Questions

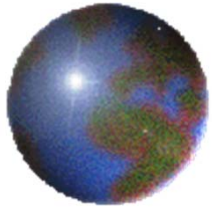
- ⊕ What's the difference, if any, between *studying* and *learning*?

- ⊕ For which task would you work harder:
 - A. Make an A on the test
 - B. Teach the material to the class?

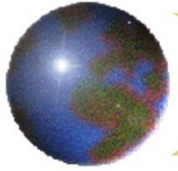


To Ace Courses *(and everything else!)*

- ✦ Stay in *learn* mode, not *study* mode
- ✦ Study as if you have to *teach* the material, not just make an A on the test



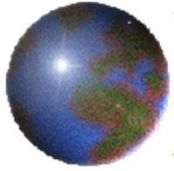
Use Metacognition to Become an Expert Learner



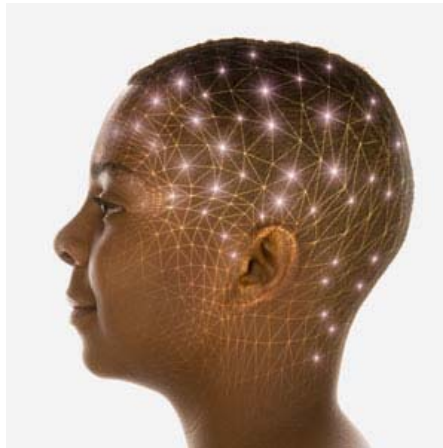
Metacognition

The ability to:

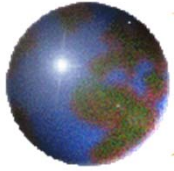
- ✦ **think about thinking**
- ✦ **be consciously aware of oneself as a problem solver**
- ✦ **to monitor and control one's mental processing**
- ✦ **to be aware of the type of learning that you are doing**



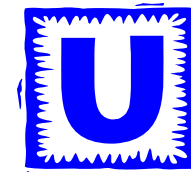
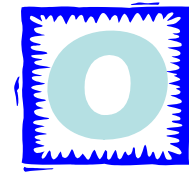
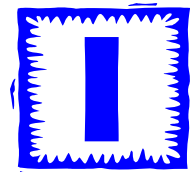
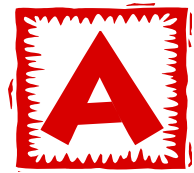
How did those students make such a fast and dramatic improvement?



It's ALL about the strategies and engaging your brain!

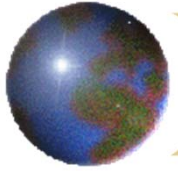


Counting Vowels in 45 seconds



How accurate are you?

*Count all the vowels
in the words on the next slide.*



Dollar Bill

Dice

Tricycle

Four-leaf Clover

Hand

Six-Pack

Seven-Up

Octopus

Cat Lives

Bowling Pins

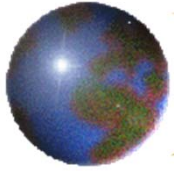
Football Team

Dozen Eggs

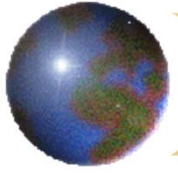
Unlucky Friday

Valentine's Day

Quarter Hour

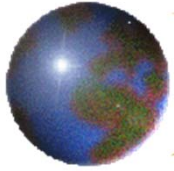


*How many words or phrases
do you remember?*



Let's look at the words again...

What are they arranged
according to?



Dollar Bill

Dice

Tricycle

Four-leaf Clover

Hand

Six-Pack

Seven-Up

Octopus

Cat Lives

Bowling Pins

Football Team

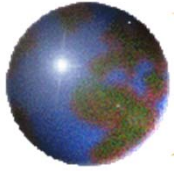
Dozen Eggs

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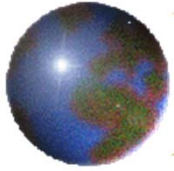
Valentine's Day

Quarter Hour

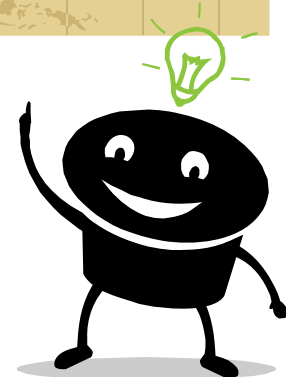
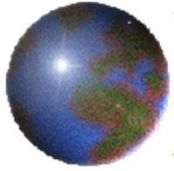
What are the words arranged according to?



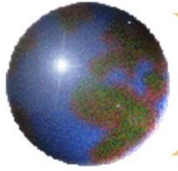
***NOW, how many words or
phrases do you remember?***



What were two major differences between the 1st and 2nd attempts?



- 1. We knew what the task was*
- 2. We knew how the information was organized*

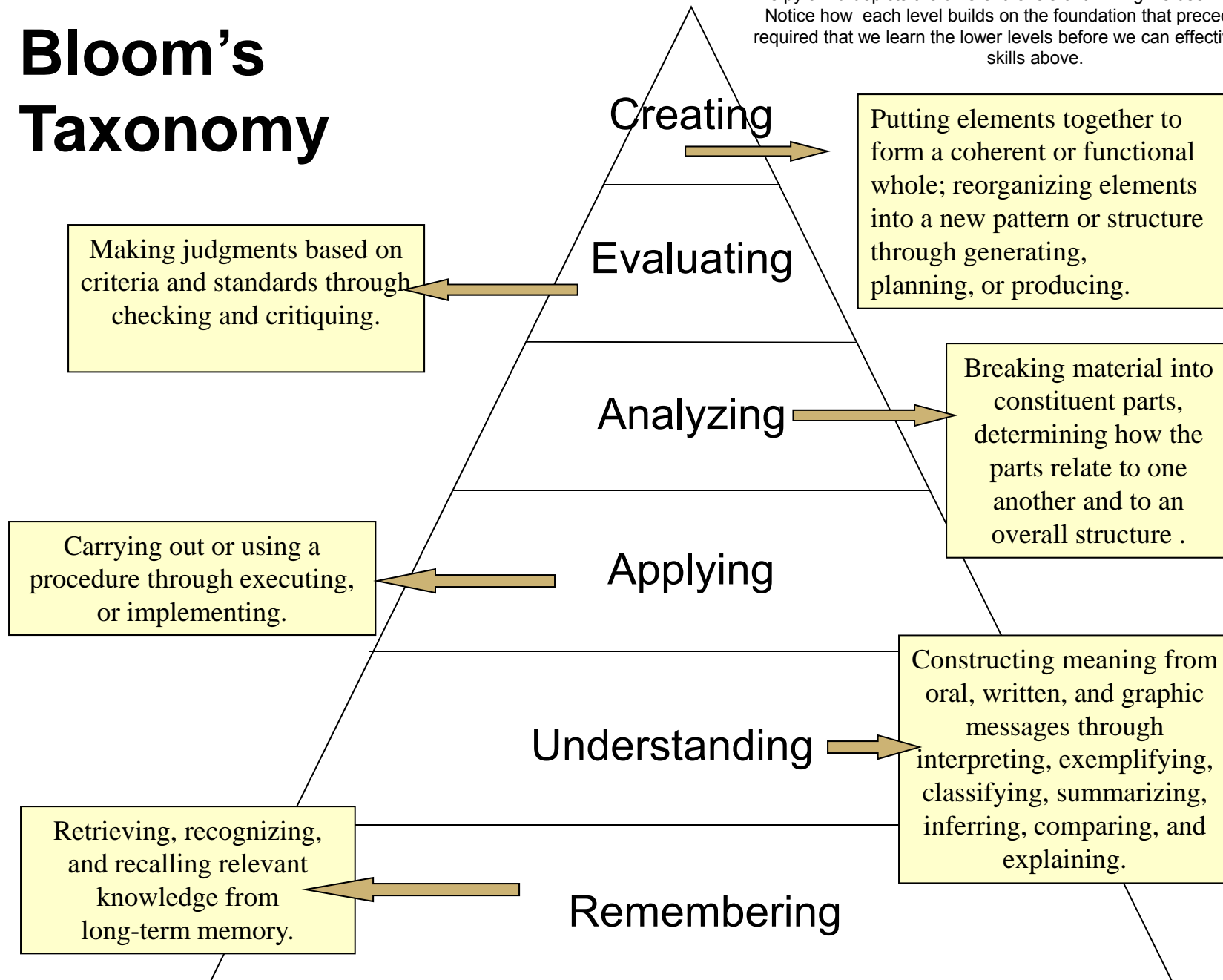


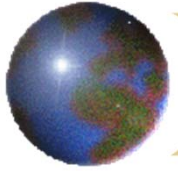
Turning Yourself into an Efficient, Expert Learner

- ✦ Do “think aloud” exercises
- ✦ Constantly ask yourself “why” and “what if” questions
- ✦ Always test your understanding by verbalizing or writing about concepts; practice retrieval of information
- ✦ Move your activities higher on the *Bloom's taxonomy* scale by comparing and contrasting, thinking of analogies, thinking of new pathways, etc.

Bloom's Taxonomy

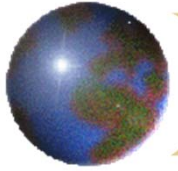
This pyramid depicts the different levels of thinking we use when learning. Notice how each level builds on the foundation that precedes it. It is required that we learn the lower levels before we can effectively use the skills above.





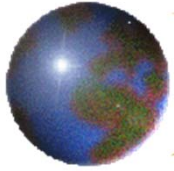
At what level of Bloom's did you have to operate to make A's, B's, or C's in high school?

1. Remembering
2. Understanding
3. Applying
4. Analyzing
5. Evaluating
6. Creating



At what level of Bloom's do you have to operate to make A's in college?

1. Remembering
2. Understanding
3. Applying
4. Analyzing
5. Evaluating
6. Creating

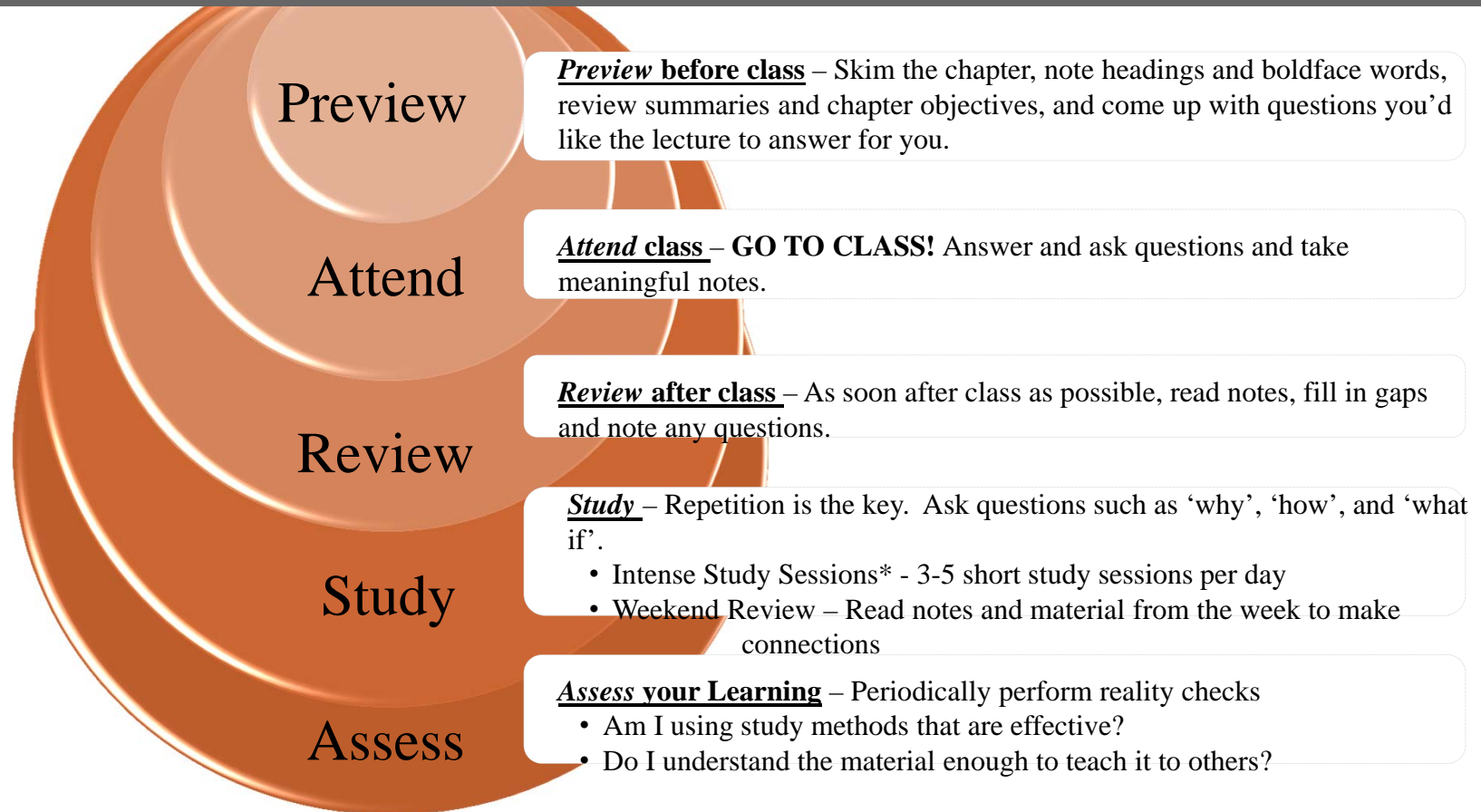


*How do you move yourself **higher**
on Bloom's Taxonomy?*



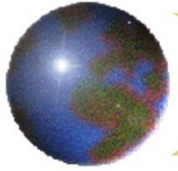
*Use the **Study Cycle**
with **Intense Study Sessions!***

The Study Cycle



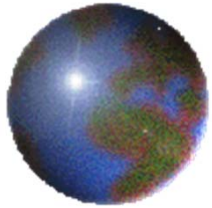
*Intense Study Sessions

1	Set a Goal	(1-2 min)	Decide what you want to accomplish in your study session
2	Study with Focus	(30-50 min)	Interact with material - organize, concept map, summarize, process, re-read, fill-in notes, reflect, etc.
3	Reward Yourself	(10-15 min)	Take a break – call a friend, play a short game, get a snack
4	Review	(5 min)	Go over what you just studied

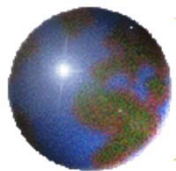


Effective Metacognitive Strategies

- ✦ Always solve problems without looking at an example or the solution
- ✦ Memorize everything you're told to memorize (definitions, formulas, etc.)
- ✦ Always ask why, how, and what if questions
- ✦ Test understanding by giving "mini lectures" on concepts (form study groups to do this!)
- ✦ Spend *some* time on every subject every day
- ✦ Use the Study Cycle with Intense Study Sessions
- ✦ Visit the learning center on a regular basis
- ✦ Aim for 100% mastery, not 90%!

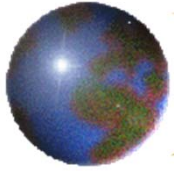


**Which One of the Next Two
Slides More Accurately
Describes YOUR Actions to
Date in Your Courses?**



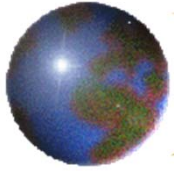
Top 5 Reasons Folks Did Not Do Well on Test 1 in General Chemistry

1. Didn't spend enough time on the material
2. Started the homework too late
3. Didn't memorize the information I needed to
4. Did not use the book
5. Assumed I understood information that I had read and re-read, but had not applied



Top 5 Reasons Folks Made an A on Test 1:

1. Did preview-review for every class
2. Did a little of the homework at a time
3. Used the book and did the suggested problems
4. Made flashcards of the information to be memorized
5. Practiced explaining the information to others



**Email from an Engineering Professor at New Mexico State
Received on 10/22/2013**

...At the end of the presentation, they were given a survey to determine their self-assessment of their use of the strategies, and were divided into groups

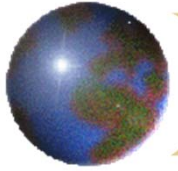
Group 1: students who did not use the strategies

Group 2: students who used the strategies

The results are shown below:

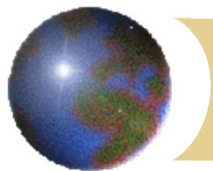
Use of Strategies	Av. on Exams 1 and 2
Students who did not use the strategies	58 and 54
Students who used the metacognitive learning strategies	95 and 80

Using the strategies makes the difference!



So, What Can You Do, Starting Now, to Pursue Your 4.0 this spring?

- ✦ Spend more time studying
(at least 2 hours/week for every hour in class)
- ✦ Aim for higher learning levels and 100% understanding
- ✦ Use office hours and study groups productively
- ✦ Use the Study Cycle
with Intense Study Sessions
- ✦ Use Metacognition to Study Smarter!!!



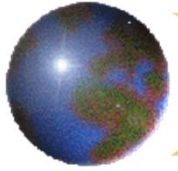
Email from Joshua, Chem Gen Chem student

"...Personally, I am not so good at chemistry and unfortunately, at this point my grade for that class is reflecting exactly that. I am emailing you inquiring about a possibility of you tutoring me."

April 6, 2011

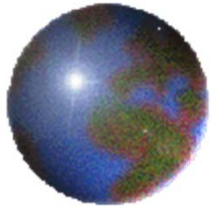
"I made a 68, 50, (50), **87, 87, and a 97 on my final.** **I ended up earning a 90 (A) in the course, but I started with a 60 (D).** I think what I did different was make sidenotes in each chapter and as I progressed onto the next chapter I was able to refer to these notes. I would say that in chemistry everything builds from the previous topic.

May 13, 2011 Semester GPA: 3.8



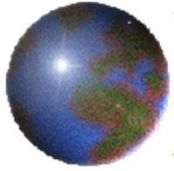
Writing Exercise

What behavior will you
commit to changing?



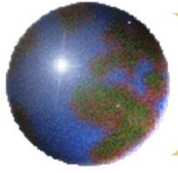
*If you don't start it within the
next 48 hours...*

... you probably never will.



Spring 2015 Challenge

- ✦ Average GPA of 3.6!
- ✦ **No** attendee with GPA less than 3.0
- ✦ Commitment to Personal and Group Excellence



Final Note

Please use all of the resources available to you at the

Visit www.cas.lsu.edu for on-line workshops and information that will teach you more effective study strategies.

I wish you a fantastically successful future!

Dr. Sandra McGuire