

A System for Effective Listening and Note Taking

Academic Success Center

You can **think** about 4 TIMES FASTER than a lecturer can **speak**. Effective LISTENING requires the expenditure of energy; to compensate for the rate of presentation, you have to actively intend to listen. NOTE-TAKING is one way to enhance listening, and using a systematic approach to the taking and reviewing of your notes can add immeasurably to your understanding and remembering the content of lectures.

Before Class

- Develop a mind-set geared toward listening.
- Test yourself over the previous lecture while waiting for the next one to begin.
- Skim relevant reading assignments to acquaint yourself with main ideas, new technical terms, etc.
- Enhance your physical and mental alertness: eat a snack before class, sit in the front and/or center of the room, focus your attention on the speaker.
- Choose notebooks that will enhance your systematic note-taking: a separate notebook with full-sized pages is recommended for each course.
- INTEND TO LISTEN.

During Class

- Resist distractions, emotional reactions or boredom.
- Pay attention to the speaker for verbal, postural, and visual clues to what's important.
- Label important points and organizational clues: main points, examples.
- When the instructor talks too fast:
 - Leave large spaces for filling in what you miss
 - Make choices about what to write – watch/listen for main points. Fill in details later.
 - Exchange photocopies of notes with classmates you trust.
 - Ask the instructor to slow down and/or repeat information
- When possible, translate the lecture into your own words.
- Be consistent in your use of form, abbreviation, etc.

w/	with	<	less than	#	number, pounds
w/o	without	>	greater than	@	approximately
+	and	↑	increase(s)	etc.	and so on
±	more or less	↓	decrease(s)	avg.	average
=	equals	ex	example	△	change
≠	does not equal	vs.	versus, against		
- Ask questions if you don't understand.
- Instead of closing your notebook early and getting ready to leave, listen carefully to information given toward the end of class; summary statements may be of particular value in highlight main points; there may be possible quiz questions, etc.

After Class

- Go over notes AS SOON AS POSSIBLE after lecture, within 24 hours at most.
- Clear up any questions raised by the lecture by asking either the teacher or classmates.
- Fill in missing points or misunderstood terms from text or other sources.
- Edit your notes, labeling main points, adding recall clues and questions to be answered. Key points in the notes can be highlighted with different colors of ink.
- Make note of your ideas and reflections, keeping them separate from those of the speaker.

**Note Taking:
Matrix Method**

The Matrix method provides a format for revising notes into a visual aid, or for combining notes from multiple sources (such as notes and a book). A matrix keeps related information organized in vertical and horizontal levels. Creating the matrix is a rehearsal step that allows students to frequently and easily reference knowledge.

Method

1. Identify related concepts. These concepts will go in rows.
2. Determine characteristics that are related among these concepts. These characteristics will become your column headers.
3. Fill in the matrix columns with information (or cues) that needs to be learned.
4. Review the matrix.

Sample: Stages of Memory

Stage	Length	Capacity	Source	Study Strategy	Other Details
Sensory	Few seconds	Very small	Sight, sound, touch	Use all senses; stay alert	First point of information intake
Short-Term Memory	18 seconds	5-7 bits	From sensory memory	Use chunking	Serves as working memory; Sensitive to interruption.
Long-Term Memory	Permanent Storage	Limitless	From rehearsal short-term memory	Rehearsal of information	Information stored based no meaning and importance.

Sample: Math Formula Matrix

Name	Formula	Variable Definitions	Uses/applications	Comments
Pythagorean Theorem	$a^2 + b^2 = c^2$	a & b are legs of a right triangle. c is the hypotenuse.	Finding lengths of sides on a right triangle.	

Sample: Chemistry Matrix

	Element				
Characteristics	Iron	Carbon	Oxygen	Sulfur	Calcium
Symbol					
Protons					
Neutrons					
Electrons					
Net Charge					

Sample: Biology Matrix

Phyla	Characteristics						
	Representative Species	Body Plan	Organ Systems	What it eats	Reproduction & Life Cycle	Habitat & Ecological Role	Phylogenetic Position & Why
Annelida							
Arthropoda							
Echinodermata							
Chordata							

Some Additional Suggestions for Information Matrices

1. Keep your matrices in the notebooks or folders in which you keep other course materials so that you can continue to add items to a given matrix during class or when studying for that class.
2. To help you see new relationships, do your matrices with a friend taking the same course.
3. Use the questions from your matrices to ask questions during class.
4. Practice reducing your matrices to smaller, key-word matrices or diagrams that you would be able to quickly reproduce for your exams. When taking an exam, more concise matrices will help you:
 - a. Organize your writing under time pressure.
 - b. Remember what you want to say.
 - c. Earn credit for points about which you don't have time to write fully.
5. Remember to avoid questions that can be answered by "Yes" and "No". A question that can be answered by Yes or No can usually be changed to one that requires a more complex answer.

For example: "Is it safe?" could be changed to "What kinds of safety factors are involved?"

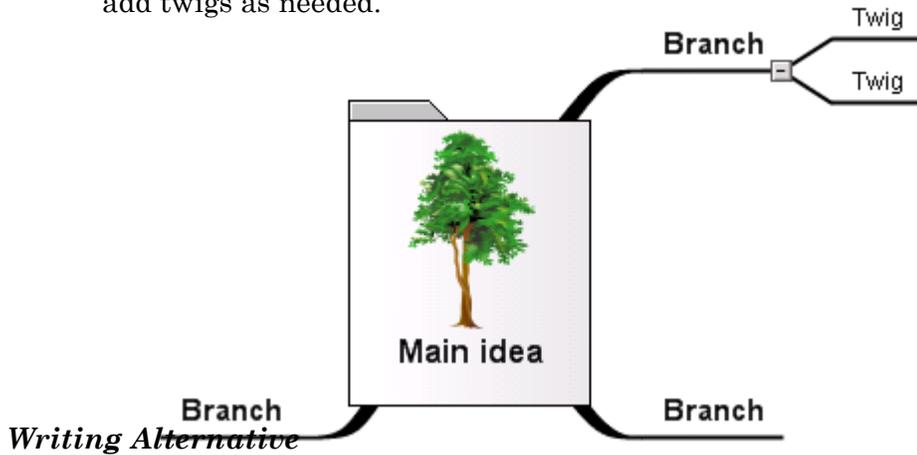
An information matrix should have more complex questions, since you want to be sure to answer it as fully as you would be required to answer it on an exam.

Note Taking:
The Mind Map Method

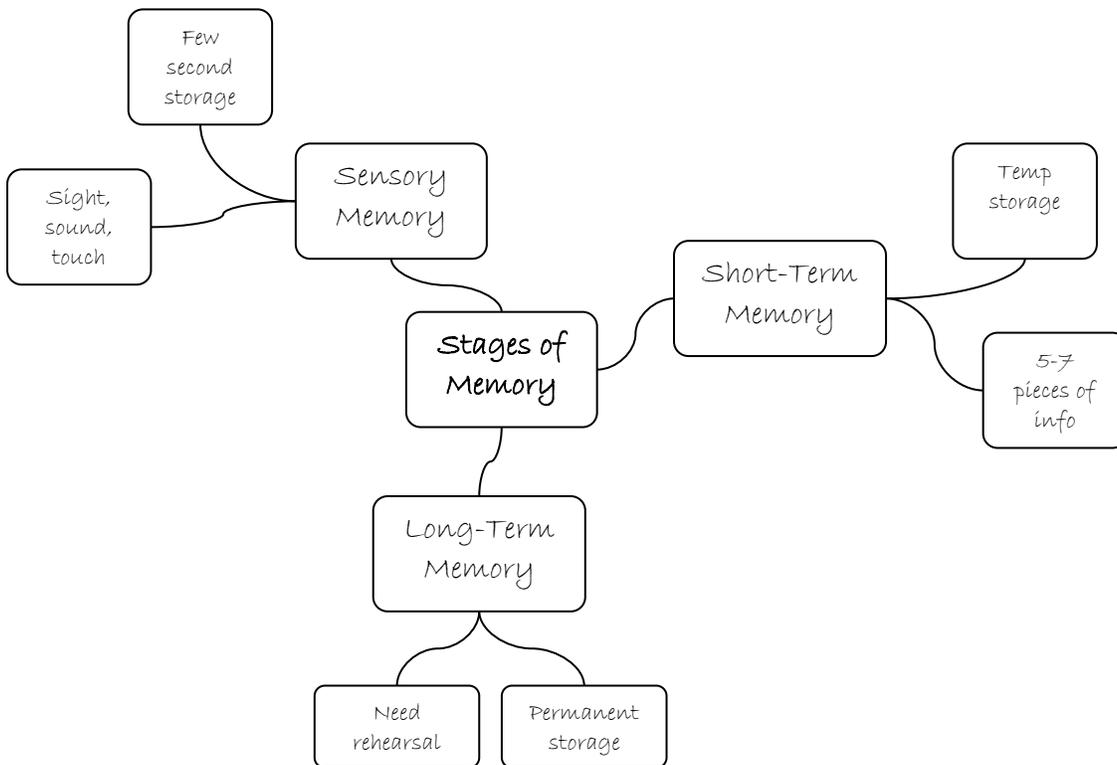
The mind-map method provides a format for revising notes into a visual aid, or for combining notes from multiple sources (such as notes and a book). This method is very effective for visual learners. Creating a mind map is also a rehearsal step that allows students to create a useful tool for on-going review.

Method

1. Select your main idea, and this in the center of your paper.
2. Determine the next level ideas/concepts (branches) from the main idea. Rewrite these ideas surrounding the main idea, and create tentacles.
3. Create a third level of ideas (twigs) that serve as cues, such as key words, dates, etc. Continue to add twigs as needed.



Visual learners like using the mind map to brainstorm ideas for a paper, and keep adding the twigs as they do research. They then convert the mind map into an outline, and the outline into their paper.



Notetaking: The Cornell Method

The Cornell method provides a systematic format for condensing and organizing notes without laborious recopying. After writing the notes in the main space, use the left-hand space to label each idea and detail with a key word or “cue.”

Method

Rule your paper with a 2 ½ inch margin on the left leaving a six-inch area on the right in which to make notes.

Also rule your paper with a two inch margin at the bottom.

This creates the following sections:

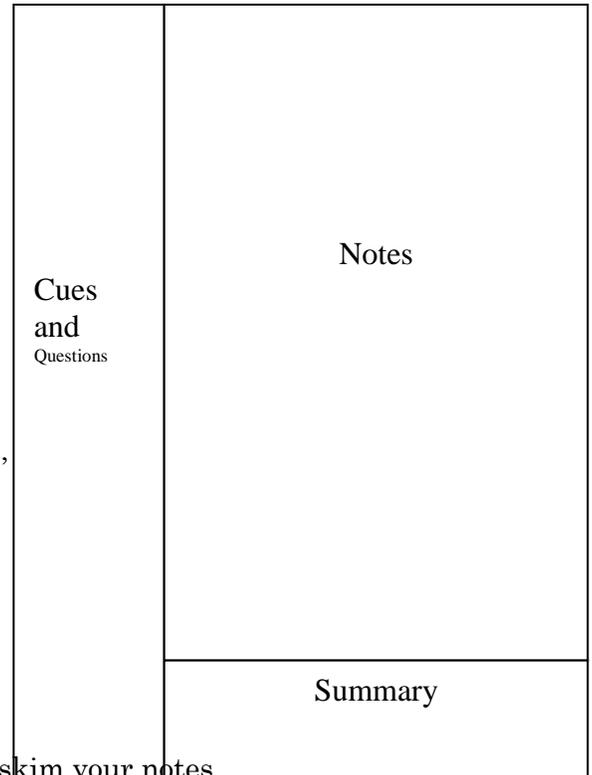
- Notes
- Cues
- Summaries

During class:

- Write notes in the six-inch area.
- When the instructor moves to a new point or you lose focus, skip a few lines.

After class:

- Complete phrases and sentences as much as possible.
- For every significant bit of information, write a cue in the left margin (i.e. cue column).
- Write a brief summary at the bottom of the page.
- Use simple statements of “big ideas” that will allow you to skim your notes.



Reviewing Your Notes

- Cover your notes with a card, leaving the cues exposed.
- Say the cue out loud, then say as much as you can of the material underneath the card.
- When you have said as much as you can, move the card and see if what you said matches what is written. Once you can say it consistently, you know it.

Stages of Memory

Sensory Memory

1. First point of information intake –sight, sound, touch
2. Lasts for a few seconds, only as exact copy

Short –Term Memory

1. Temp storage of small amounts of info – 5-7 average—digit span experiment
2. “Chunking” like bits of info together makes it easier to remember—e.g., S.S.# has 3/2/4 bits grouped.
3. Info from sensory member is selected for attention – phone # you’ve looked up, etc.
4. Serves as working memory
5. Sensitive to interruption—someone interrupts before you make the phone call and the # is gone.
6. After 18 seconds w/out rehearsal, info is lost and doesn’t go to LTM.
7. Coded, rehearsed info can make it to long-term memory.

How does the process of chunking help us remember?

What happens to info entering STM?

Long-Term Memory

1. Permanent storage
2. Limitless capacity
3. Rehearsal process (repetition, etc) required
4. Info stored on basis of meaning and importance

How does info get moved from STM to LTM?

Info must go through 3 stages – sensory, STM, and LTM. Rehearsal process for retention. Info stored on basis of meaning and importance.

Note-Taking: Creating and Using Notecards

Note cards (aka, flash cards or concept cards) are an excellent tool for reviewing and rehearsing knowledge. Students most commonly create note cards after classes and use them before exams, but there are many variable uses for note cards that make them very versatile.

Creating Note Cards

1. On the “front” of a card, write a clue, keyword, or phrase for the term/concept that you want to learn.
2. Also on the front in the upper right corner, write a word that may help you sort you cards in the future. Alternatives could be numbering, highlighting colors, or using colored cards.
3. On the “back” of the card, write the details you want to memorize. Often this will be a definition, but consider adding an example or application.
4. Also on the back, make note of the source for the card (ex: page in the textbook or date from your notes)

Tips to Review Note Cards

- ◆ Based on content of the front, guess the details on the back.
- ◆ Based on the details on the back, quiz yourself on the front in a “Jeopardy” format. (i.e. “What is mitosis?”)
- ◆ Share cards with a classmate or study partner to quiz each other.
- ◆ Keep the cards in an order if memorization in an order is important.
- ◆ Shuffle your cards often to prevent memory based on order.
- ◆ Form a study group and create copies of cards for each other. (ex: Andy makes cards based on pages 1-10, Beth makes cards based on pages 11-20, etc)
- ◆ Keep cards handy for a quick 5-15 minute study break on the bus, while walking, over lunch, etc.
- ◆ Recite note cards verbally to practice pronunciation. Verbal recitation enhances the speed and accuracy of learning.
- ◆ Write sources on the cards for reference if you need additional information.

For more ideas, refer to: <http://www.sarc.sdes.ucf.edu/ss73.pdf>