ELFTMANN STUDENT SUCCESS CENTER

Note Taking Structures

Moving Beyond Bullets and Dashes

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2014

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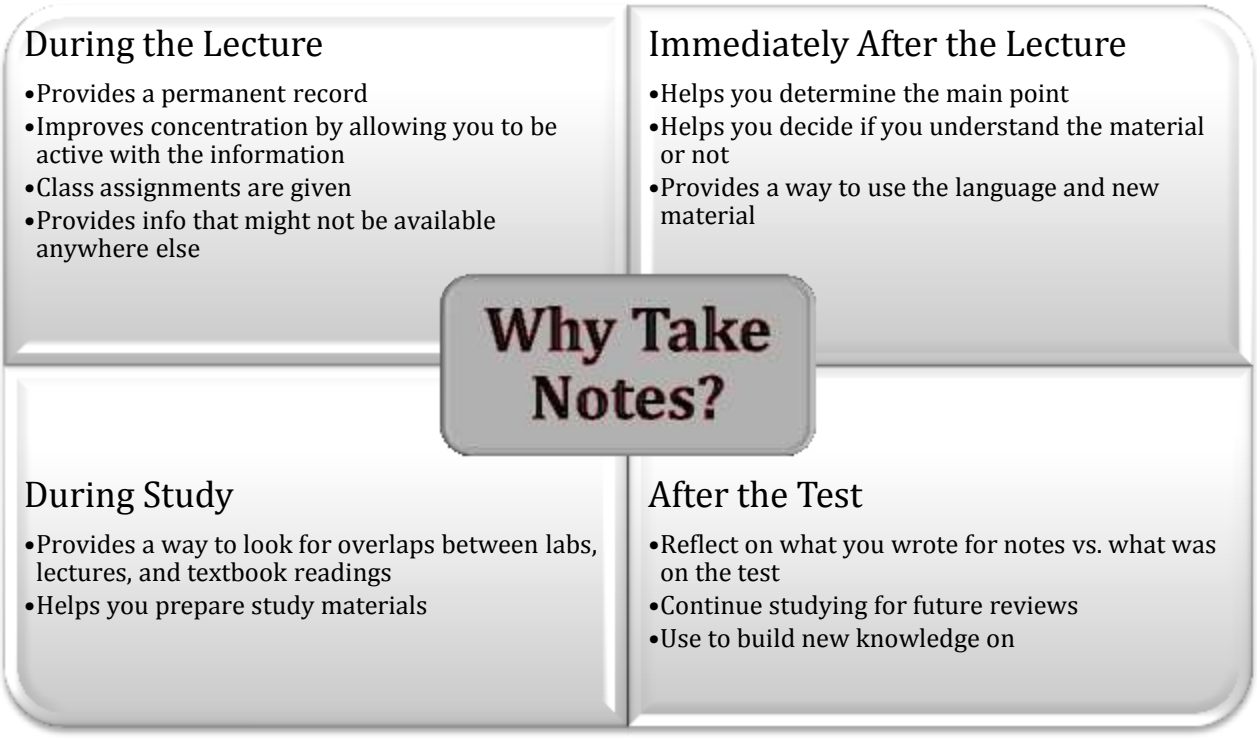
CONTENTS

NOTE TAKING

The more actively you are involved in your learning, the better you will learn. Technical programs require students to know a lot of detailed, complex, and often unfamiliar information in a relatively short amount of time. That wealth of information is mostly communicated through text, such as a textbook or article, or through an instructor's lecture. Note taking can provide a way to become actively involved in learning the material because you're asking more of your senses and your mind to act. Taking notes while listening to a lecture employs your sense of hearing, sight, and touch. Additionally, taking notes requires your thinking to determine what's important enough to write down and how the information is organized, as well as use the language of the concept. What's more, being able to see this technical information on paper means that your mind isn't required to remember it all at once, and is available to analyze and respond to it.

WHY SHOULD I TAKE NOTES?



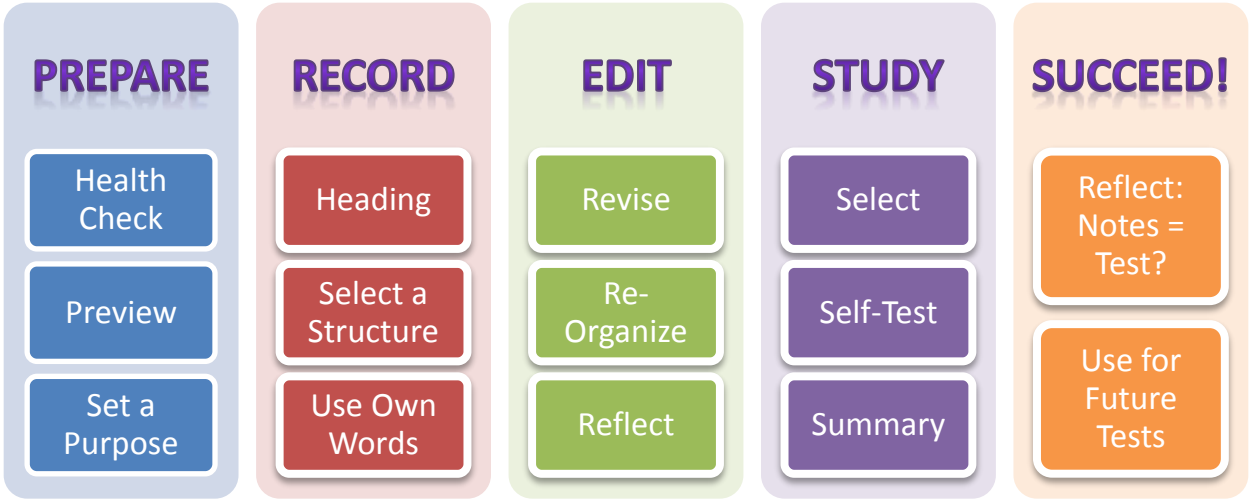
THE P.R.E.S.S. MODEL OF TAKING NOTES

What makes effective readers effective can be applied to effective note-takers as well. Effective readers:[1]

- ✓ Are **active** note-takers
- ✓ **Prepare** so they know what to read and/or listen for
- ✓ Make **predictions** about what will come next
- ✓ **Adjust** their strategies for content and rate
- ✓ Read and/or listen **selectively** for what is important
- ✓ Activate their **background knowledge** to help them make meaning
- ✓ Constantly **monitor and evaluate** how well they are understanding the information

P.R.E.S.S. stands for **Prepare, Record, Edit, Study, and Succeed**, and stems from this research. This general process is an excellent way students can get the most out of the notes they take from their textbook readings and lectures. [2]

The P.R.E.S.S. Model



PREPARE

CONDUCT A HEALTH CHECK

The first step to taking effective notes is to make sure that all of your other basic needs are met. Ensuring that needs like hunger, thirst, and sleep are taken care of ahead of time will allow you to concentrate on the incoming information. Make sure you arrive to class on time, and are organized and ready to begin taking notes as soon as class starts. Being physically ready to take notes will translate into being mentally ready.

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[1] Duke, N. L. and Pearson, P. D. (2002). Effective practices for developing reading comprehension. *What Research Has to Say About Reading.* 3rd ed. International Reading Association, Inc.

[2] Adapted from: McWhorter, Kathleen. (2010). *College reading and study skills.* 11th ed. Boston: Pearson Longman.

Preview the Reading or Topic

Take a few minutes to scan through your chapter before you start reading it, or check your syllabus for what the anticipated topic of the next lecture will be. This will help you decide ahead of time how to organize your notes, think about what you already know, and predict what you will learn. A preview will also activate the processes your brain will need to understand the information, and give adequate time to effectively do so.

Set a Purpose

Use your preview to determine your purpose will be for reading or listening. Doing so ahead of time, instead of waiting to see what the reading or lecture will be about, will give you a head start on deciding what is important and help you better understand the material. This will also help you check how well you understand the material along the way.

Record

Use a Heading

One of the purposes of notes is to serve as a record of a lecture.[3] Write the title of the day's topic and the date on the top of each page of notes. You can also include items like your name, the instructor, or the corresponding chapter in your textbook. These simple pieces of information will keep your notes organized, and allow you to place all of your energy on the information instead of a constantly reshuffling or reorganizing as you search for one specific note.

Select a Structure

Most of this book covers the structures you can use to record your notes, but there are a few basic things to keep in mind as you select one.

First of all, plan to write just enough to help you remember the main ideas later.[3] In college, the textbook will be your introduction to a topic and the lecture will build on it with specific examples and details. Leave plenty of blank space between sub-topics to fill in later. This plan can help ease the anxiety some students feel about trying to write everything down. While the average instructor can speak between 100-125 words per minute, the average student can write only about 30 words per minute.[4] Symbols, abbreviations, or creating your own code will help you keep up with the lecture.

Common Symbols and Abbreviations

Word	Abbreviation	Word	Symbol
including	incl.	and	&
example	ex.	not	≠
with	w/	change	$\underline{\Delta}$
important	imp.	greater than	≥
continued	cont'd	equals/similar to	≋
because	b/c	ask about this later	?

[3] McWhorter, Kathleen. (2010). *College reading and study skills.* 11th ed. Boston: Pearson Longman.
[4] Wong, Linda. (2009). *Essential study skills*. Boston, MA: Houghton Mifflin Company.

Second, use two things to decide on a structure: the way a lecture will be organized (which you examined as you prepared), and the way that you learn. The specific graphic organizers will be explained in fuller detail in later sections of this book.

Multiple Intelligences & Note Taking Strategies[5]

Intelligence	Strategy
Linguistic (words)	Rewrite your notes in a different style
Logical (sequences)	Use tables to show relationships between ideas
Bodily (movement)	Study with notes spread out in sequence
Spatial (spaces)	Use graphic organizers
Interpersonal (other people)	Use Note Taking Pairs
Intrapersonal (self)	Reflect on your understanding of your notes
Musical (rhythm)	Recite your notes to a rhythm or song
Naturalistic (genres)	Notice similarities/differences or group concepts

Lecture Format + Graphic Organizers to Use

Compare and contrast	• Venn Diagram • Table (for +2 features/objects)
Cause and effect	• Fishbone Map • 2-Column Chart
Time sequence	• Timeline • Process List
Classification	• Table • Pyramid
Description or Definition	• Concept Web • 2-Column Chart

[5] Carter, Carol, Bishop, Joyce, & Kravits, Sarah Lyman. (2009). *Keys to success: building analytical, creative, and practical skills*. Upper Saddle River, NJ: Pearson Education, Inc.

Use Your Own Words

Writing notes word-for-word is not only time and energy consuming, but it requires almost no thought. Verbatim notes may be effective if the information is very difficult for you to understand, but your understanding of the information will not improve or expand until you use your own words. For information that you are able to understand, using your own words allows you to tap into your background knowledge and previous experiences to deepen your understanding. Using language that you're comfortable with and that you choose also gives you ownership over that understanding.

Edit

Revise

As soon as possible after a lecture or textbook reading, return to your notes and fill in the blanks. The longer you wait, the less effective editing becomes. [6] Expand out any examples, fill out definitions, or add more details in the blank spaces you left during the Record stage. This is also an opportunity to correct any information you may have written down that is incorrect.

Reorganize

Being able to turn information you were given in one format into a different format is a powerful way to exercise your understanding of that information. For example, creating a table with information found in a lecture can help deepen your understanding because it asks you to apply it in a new way.

Reflect

Part of the editing process can also include reflecting on how the information fits with what you already know, or what another source says about it. If you are taking lecture notes, for example, and you remember reading about the same concept in your textbook, use the Editing stage to point out and reflect on that connection. Integrating your textbook and lecture notes can also be incredibly helpful in knowing what to review for a test.

Study

Select

Simply re-reading over your notes to study them is not effective because students spend so much time and energy concentrating on *how* the information is written that they have none left for *what* the information is. In other words, re-reading is ineffective because it asks us to memorize how the sentence is worded, not what it actually means.

As you review your notes, look for any recurring themes or relationships. Pull out main ideas from details, and make a purposeful plan of what to study. This way, the wording of a question or an answer on a test won't throw you off, and you'll be able to answer more types of questions (multiple choice, short answer, essay, etc.).

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[6] McWhorter, Kathleen. (2010). *College reading and study skills.* 11th ed. Boston: Pearson Longman

Self-Test

One of the best ways to prepare for a test is to simulate test conditions. Familiarizing yourself with the way questions and answers may be worded while you study allows you to concentrate on the content on the day of the test. A Self-Test can not only provide an opportunity to create questions and answers, but also an opportunity to see how well you know the information and practice picking out what's important.

Example Self-Test

Example Idea from Notes	Example Question
Common features of most hybrids	*What are the common features of most hybrids?*
Parallel-hybrid design	*What is a parallel-hybrid design?*
Classifications of Hybrid-Electric Vehicles	*How are hybrid-electric vehicles classified?*

Summary

Creating a summary at the end of each page of notes is another excellent way to study. Like a Self-Test, a summary will likely show you how well you know the information; if you can write a summary or recall one while studying, you are likely in good shape for a test. Summaries can also help you see how multiple pages of notes fit together, and allow you practice picking out the most important ideas. You might use the bottom margins to write a summary, save a few lines at the bottom, or use the Summary Section in a Cornell Notes structure (discussed later on).

Succeed!

What was on the Test vs. What was in Your Notes

After you've taken the test, go back to your notes and review how closely what you wrote down for notes matched what was on the test. Each instructor has a slightly different testing style, but once you've taken two or three quizzes or tests you should have a pretty good idea as to specifically what will be on the test.

After you've submitted your test, open your notebook. Choose a highlighter color or symbol, and mark what ideas in your notes were on the test. Think about the types of questions that were on the test – did you have to give your opinion? Tell the steps? Define terms? Also think about the source of those questions – were they mostly out of the book? From lecture?

Reflect on how you could use that to know what to write down for future notes. For example, if the test you just turned in covered a lot of vocabulary terms but you only had a few written down for notes, change your focus to terms and their definitions for the next test.

Use for Future Tests

Especially in the technical programs, you will need to use the knowledge you learned yesterday to learn today's information. College students are also often required to complete cumulative mid-terms and finals. In other words, there's a good chance that the test will not be the last time you will need to know the information.

Use the last few pages of your notebook to start a running list of the main ideas that are on your tests. You can then use that running list as a checklist for what you feel you've mastered, and what you need to review for any upcoming mid-term or final exams. Include the date of the test on your list, and you'll be able to quickly locate the notes that cover that particular topic.

STRUCTURES

There are many different ways to take notes. The best way to choose which structure will work for you is to be prepared for the topic of the lecture ahead of time. Be sure to cover any assigned reading before the lecture so you are familiar with the topic. On the day of the lecture, follow the Prepare step of the P.R.E.S.S. process, including giving yourself enough time to get organized before class starts, and using any time before the lecture begins to review past notes or your textbook.

TIERED STRUCTURES

Humans need to see the way that things are related to make them meaningful, and tiered note-taking structures use systems of tabbing, numbers, or bullet points to show that relationship. More general ideas start on the left, and then ideas are indented according to how specific they get.

OUTLINING

This format uses a combination of letters and numerals to show the relationship of ideas.

Pro	Con
✓ Ideas are well-organized ✓ Relationship between ideas is easy to see at a glance	• May require practice to be able to use quickly in a lecture setting • Difficult to return to a previous idea to add more

Outline Structure:

The letters and numerals that outlines follow are in a specific order, and each is indented to show which larger idea they fit under. In a generic sense, an outline follows this structure:

I. Overall Topic
    A. Main Idea A
        1. Supporting Idea #1 of Main Idea A
            a. Detail #1
                i. Specific Example of Detail #1
            b. Detail #2 of Supporting Idea #1
        2. Supporting Idea #2 of Main Idea #1
    B. Main Idea B
        1. Supporting Idea #1 of Main Idea B
            a. Detail #1 of Supporting Idea #1

How your outline is set up depends on how many ideas, details, and examples you have. You may not have every level, either. Another way to interpret this is to think of how a grocery store is organized:

I. Grocery Store A. Produce Department 1. Vegetable Section a. Fresh Vegetables i. Green Peppers ii. Lettuce b. Bagged Vegetables i. Potatoes ii. Onions	I. Overall Topic A. Main Idea A 1. Supporting Idea #1 a. Detail #1 i. Example #1 ii. Example #2 b. Detail #2 i. Example #1 ii. Example #2

BULLETS

A system of bullets and indents is similar to outlining, but requires only a dash or bullet point to indicate where a new line begins.

Pro:	Con:
✓ Familiar to many students ✓ Good for fast note-taking ✓ Useable with other note-taking structures	• Can be difficult to edit and/or review • Passive use of information – low level of thought used

Bullet Structure

As with outlining, the overall topic sits the closest to the left margin, and each idea is indented according to specificity.

- Overall Topic
  - Main Idea #1
    - Supporting Idea #1 of Main Idea #1
      - Detail #1
        - Specific Example of Detail #1
      - Detail #2 of Supporting Idea #1
    - Supporting Idea #2 Main Idea #1
  - Main Idea #2 of Overall Topic
    - Supporting Idea #1 of Main Idea #2
      - Detail #1 of Supporting Idea #1

Microsoft Word offers a number of bullets for leveling; what is shown is the default setting. Many students also use simple dashes, or use the same bullet point with only an indentation to show how each idea is related.

Take our grocery store example again:

• Grocery Store
  ○ Produce Department
  ▪ Vegetable Section
  • Fresh Vegetables
  ○ Green Peppers
  ○ Lettuce
  • Bagged Vegetables
  ○ Potatoes
  ○ Onions
	• Overall Topic
	  ○ Main Idea #1
	  ▪ Supporting Idea #1
	  • Detail #1
	  ○ Example #1
	  ○ Example #2
	  • Detail #2
	  ○ Example #1
	  ○ Example #2

GRAPHIC ORGANIZERS

Graphic organizers are charts and diagrams that we use to show how information is related visually and spatially.

Pro	Con
✓ Visual representation of how details relate ✓ A lot of information can be shown at once ✓ Several organizer options to show several different relationships ✓ Easy reference	• Difficult for some learners to follow • Can get overwhelming or hard to follow if too much information is included • Some learners may have trouble choosing an appropriate organizer • Requires familiarity with multiple organizers

There are several common relationships used in textbooks and lectures.

Common Relationships

Relationship	Organization Method:	Details:	Relationship:	Organization Method:	Details:
Sequential	Process	Steps or dates	Analyzing	Classification	Groups or categories of examples
Listing	Illustration	A list of examples		Compare/Contrast	Similarities or Differences
	Description	Sensory images		Cause/Effect	Causes or Consequences
	Definition	Unique features		Argument	Reasons for or against

To determine which relationship or method of organization your text or lecture uses, think about the main point of the information. Consider the questions in the table on the following page, and see which set your text or lecture best answers.[7]

[7] Adapted from Buehl, D. (2009). *Classroom Strategies for Interactive Learning.* 3rd ed. Newark, DE: International Reading Association.

What seems to be the point?	What question(s) does it answer?	What key words do you notice?	Organization - Pattern
Steps are being performed for a specific outcome	How to… What are the steps for…?	First, Second, Third Later, Meanwhile, Ultimately	Sequential – Process
An idea needs to be understood	Like what?	For example, Such as, One example is, Another	Listing - Illustration
The reader should be able to mentally visualize the idea	What does ____ look (smell, sound, feel, taste) like?	Above, Under, as ___ as, Like a…	Listing – Description
A term or idea needs to be defined	What is…? What does ___ do?	____is…., Another name for ___ is, One key feature of ___	Listing - Definition
An idea can be sorted into categories or groups	What fits in this group? Why do these details belong in the same category?	One type, Another kind, Some varieties	Analyzing – Classification
Two or more ideas are the same and/or different	What are the similarities between these ideas? What are the differences between these ideas?	At the same time, Similarly, Like ___, However, Conversely, Unlike _____	Analyzing – Compare/Contrast
Something happened and this is why or this is likely what will happen because of it	Why did this happen? What were the results? What might happen because of this?	For this reason, One cause, As a result, Consequently	Analyzing – Cause/Effect
Something should or shouldn't be, and this is why or why not	Why should…? Why shouldn't…? What are the advantages of…? What are the disadvantages of…?		Analyzing - Argument

Sequential Relationships

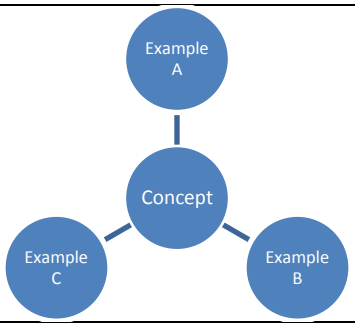
A text or lecture that talks about a process will likely use sequential steps or dates as details. These steps may be in sequence, in which the steps follow a first-second-third order, or in a general list. A timeline or process map works well to show a process relationship because the sequence is included. If the steps do not necessarily have an order, a general word web can suffice.

Technical students often have to know many different sequences, and many sequences have actions that happen simultaneously or while the previous action is still in progress. A timeline or process map can help organize all the actions that happen in a given process.

Graphic:	**Example:**
Timeline	
Process Map	

Listing Relationships

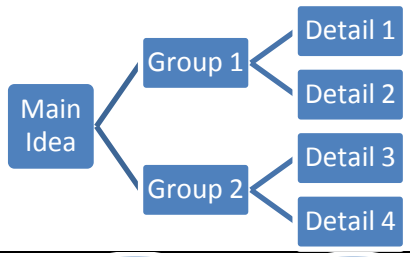
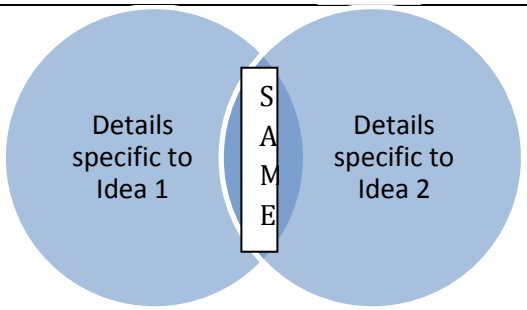
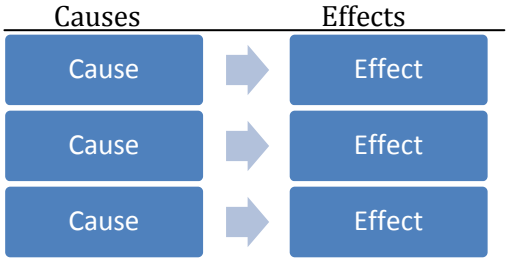
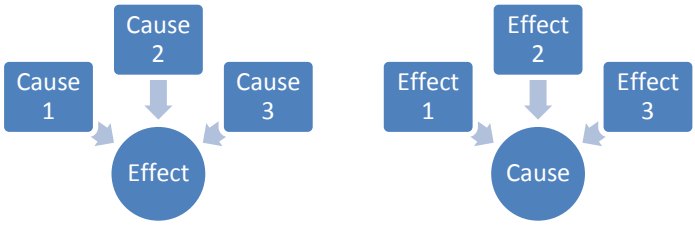
The introductory content of many technical programs often includes lists of things, like a list of tools, positions available within the field, or components. Information is often introduced in this form because then the ideas can be discussed further more easily. For example, a text might give an overview of the tools needed for a particular field by listing them first, and then go into more detail about the features of each tool. A text might discuss a concept by listing the sensory images (what it sounds/looks/smells/tastes/feels like) of it.

Graphic:	**Example:**
Word Web	

Analyzing Relationships

Technical textbooks often introduce a basic concept in the form of a sequence or list, and then elaborate on that concept further through some analysis of it. The text may discuss ideas in terms of categories (such as hand tools, power tools, and measuring tools), similarities and/or differences, or causes and/or effects.

When taking notes from a text that uses one of these methods to organize its information, it's important to record that relationship between details onto the page. Graphic organizers like the ones listed below allow for that relationship to be shown easily.

<table>
<tr><th>Graphic:</th><th>Example:</th></tr>
<tr><td>Hierarchy Map
Organizes details into meaningful categories</td><td> 
</td></tr>
<tr><td>Double Bubble
Organizes similarities and differences of two ideas</td><td> 
</td></tr>
<tr><td>Comparison Table
Organizes details of multiple items by characteristic for comparison</td><td><table>
<tr><th></th><th>Feature 1</th><th>Feature 2</th><th>Feature 3</th></tr>
<tr><td>Item 1</td><td></td><td></td><td></td></tr>
<tr><td>Item 2</td><td></td><td></td><td></td></tr>
<tr><td>Item 3</td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Two-Column Chart
Organizes causes and effects</td><td> 
</td></tr>
<tr><td>Burst
Organizes causes or effects using arrows to indicate movement</td><td> 
</td></tr>
</table>

THE CORNELL METHOD

Dr. Walter Paulk from Cornell University developed the Cornell Method of note taking, and it has become a common system for college students to use. The format for the Cornell Method is found below.

Linda Wong (2009) suggests using the 5 R's for using the Cornell Method:[8]

1. **Record** your notes in the Notes Section using a format you're comfortable with.
2. **Reduce** your notes to key words. Write them in the Cue Column, and use them to form questions.
3. **Recite** the answers to your questions aloud.
4. **Reflect** on the page and write a summary in the Summary Section at the bottom.
5. **Review** the summary section of each page to study. You can also line up your pages so only the Cue Column is showing, and practice answering your questions.

The Cornell Method Structure

2. Cue Column	**1. Notes Section**
3. Summary Section	

Try using only the front side of a notes page to complete Cornell notes during the lecture, and then use a Self-Test on the back side of the opposing page. A Self-Test is a two-column chart that lists questions from headings, your Cue Column, or vocabulary words on the left and the answers on the right.

[8] Wong, Linda. (2009). *Essential study skills*. Boston, MA: Houghton Mifflin Company.

Self-Test + Cornell Notes Structure

Back Side of Previous Page *Front Side of Current Page*

<table>
<tr><td rowspan="2">Questions</td><td rowspan="2">Answers</td><td rowspan="2">SPIRAL SPRIAL SPIRAL</td><td>Cue Column</td><td>Notes Section</td></tr>
<tr><td colspan="2">Summary Section</td></tr>
</table>

TWO- AND THREE-COLUMN NOTES

The Self-Test mentioned earlier is an example of Two-Column Notes.[9] This type of chart is very versatile, and transfers easily to reviewing. The left column can be the general topic, term, or question and the right column is then the corresponding details, definition, or answer.

Examples: Two-Column Notes

Term	Definition
rotor	Rotating part of a mechanical device

Rule	Definition
When both numbers are positive	Answer is positive

Question	Answer
What does BORN stand for?	Base Orphan Reference Node

Three-Column Notes[4] are similar to Two-Column Notes in that the left column is the more general topic, term, or question; however, Three-Column Notes can provide an extra space for examples or more detailed description, space for work, or a place to integrate textbook notes with lecture notes.

[9] Wong, Linda. (2009). *Essential study skills*. Boston, MA: Houghton Mifflin Company.

Examples: Three-Column Notes

Topic	Def	Application
rotor	Rotating part of a mechanical device	alternator

Original Math Problem	Space for Work	Original Solution (from book or class)
Leave in exponential form: $4^5 \times 4^7$		$4^5 \times 4^7 = 4^{5+7} = 4^{12}$

Topic	Textbook	Lecture
Product Life Cycle	1. Intro 2. Growth 3. Maturity 4. Decline	Class Example: Post-It Notes

R3 NOTES

Another note taking structure, R3 Notes, provides several ways readers can use newly learned information.[10] This particular system allows for a place to link new material to what you already know; this has also been proven by research to enhance comprehension. For this reason, R3 Notes is best for unfamiliar information that you will likely need to know well for future application. Students may find it useful to create this structure on a Microsoft Word Template rather than drawing one on a piece of notebook paper, and print copies out for actual use.

Example: R3 Notes Structure

Notes:	**Questions w/Answers:**	**Summary:**
Record important items	Respond by writing questions and answering them	React by writing a summary about what you are learning
		Associations: Link new material to existing knowledge

[10] Garnes, D. (28 Nov 2003). *Scaffolding Instruction Workshop: Facilitator's Guidebook.* Scaffolding Instruction: Assisting Reading Performance Workshop 2 [Powerpoint Slides]. Retrieved from http://tinyurl.com/74bhx9a