

**NAIT**  
**Student Counselling**  
**Academic Success Centre**

**Strategies for Success**

Techniques to Maximize Learning Potential

Revised 2010, 2009, 2008, 2007

First Edition ©2005

NAIT

Student Counselling

Academic Success Centre

Room W111- PB

HP Centre, Main Campus

10504 Princess Elizabeth Avenue,

Edmonton, Alberta, Canada T5G 3K4

Phone: (780) 378-6133

E-mail: [counselling@nait.ca](mailto:counselling@nait.ca)

Compiled and edited by Michele Pentyluk and Margaret Marean. Contact information: [michelep@nait.ca](mailto:michelep@nait.ca); [mmarean@nait.ca](mailto:mmarean@nait.ca)

The owner of this manual is granted permission to copy any pages for personal use only. With this exception, no portion of this manual shall be reproduced for any other means without prior written permission.

Printed in Edmonton, Alberta, Canada



# Table of Contents

<b>1. INTRODUCTION.....</b>	<b>1</b>
<b>A GOOD PLACE TO START.....</b>	<b>1</b>
<b>A QUICK PREVIEW.....</b>	<b>1</b>
<b>IF YOU STILL NEED HELP.....</b>	<b>1</b>
<b>2. BEFORE YOU BEGIN.....</b>	<b>3</b>
<b>SELF-TEST: RATE YOUR STUDY SKILLS.....</b>	<b>4</b>
<b>PERSONAL HABITS TO BOOST SUCCESS.....</b>	<b>7</b>
<b>3. TIME MANAGEMENT.....</b>	<b>9</b>
<b>TIPS FOR TIME MANAGEMENT.....</b>	<b>10</b>
<b>USING YOUR NAIT STUDENTS' DAY PLANNER.....</b>	<b>11</b>
<b>PERFECTIONISM.....</b>	<b>13</b>
<b>MANAGING PROCRASTINATION.....</b>	<b>14</b>
<b>GOAL SETTING.....</b>	<b>16</b>
<b>4. PRINCIPLES OF LEARNING AND MEMORY.....</b>	<b>17</b>
<b>TIPS TO IMPROVE MEMORY AND LEARNING.....</b>	<b>18</b>
<b>MEMORY PRINCIPLES.....</b>	<b>22</b>
<b>DAILY AND WEEKLY REVIEW.....</b>	<b>24</b>
<b>MNEMONICS (MEMORY TRICKS).....</b>	<b>25</b>
<b>KEEP IT POSITIVE:.....</b>	<b>28</b>
<b>5. CONCENTRATION.....</b>	<b>29</b>
<b>TIPS FOR IMPROVING CONCENTRATION.....</b>	<b>30</b>
<b>TECHNIQUES TO HELP IMPROVE YOUR LEVEL OF CONCENTRATION ...</b>	<b>31</b>
<b>STUDYING WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER</b>	
<b>(ADHD).....</b>	<b>34</b>
<b>6. NOTE-TAKING AND ORGANIZATION.....</b>	<b>37</b>
<b>TIPS FOR EFFECTIVE NOTE-TAKING AND ORGANIZATION.....</b>	<b>38</b>
<b>BINDER ORGANIZATION CHECKLIST.....</b>	<b>38</b>
<b>STRATEGIES FOR EFFECTIVE NOTE-TAKING.....</b>	<b>39</b>
<b>COMMON SYMBOLS AND ABBREVIATIONS.....</b>	<b>40</b>
<b>MARGIN METHOD.....</b>	<b>42</b>
<b>MIND MAPPING.....</b>	<b>43</b>

<b>7. STUDY STRATEGIES .....</b>	<b>45</b>
<b>TIPS FOR STUDYING .....</b>	<b>46</b>
<b>LEARNING PRINCIPLES .....</b>	<b>47</b>
<b>WHICH STRATEGY SHOULD I USE? .....</b>	<b>48</b>
<b>TEST YOURSELF .....</b>	<b>49</b>
<b>PAS: SYSTEMATIC APPROACH TO CHAPTER AND NOTE REVIEW .....</b>	<b>50</b>
<b>FLASH CARDS .....</b>	<b>52</b>
<b>CONCEPT MAPS .....</b>	<b>54</b>
<b>DIAGRAMS .....</b>	<b>55</b>
<b>HIERARCHIES .....</b>	<b>57</b>
<b>SEQUENCES .....</b>	<b>59</b>
<b>MATRICES .....</b>	<b>60</b>
<b>STUDY TECHNIQUE FOR LABORATORIES .....</b>	<b>61</b>
<b>STUDY TECHNIQUE FOR QUANTITATIVE CONTENT .....</b>	<b>62</b>
<b>STUDY TECHNIQUE FOR DIAGRAMS AND MAPS .....</b>	<b>63</b>
<b>STUDYING IN GROUPS .....</b>	<b>64</b>
<b>8. READING AND LISTENING .....</b>	<b>65</b>
<b>TIPS FOR READING AND LISTENING .....</b>	<b>66</b>
<b>READING TO REMEMBER .....</b>	<b>67</b>
<b>IMPROVING YOUR STUDY READING SKILLS .....</b>	<b>69</b>
<b>ACTIVE LISTENING .....</b>	<b>71</b>
<b>9. EXAM WRITING &amp; STRESS MANAGEMENT .....</b>	<b>73</b>
<b>EXAM PREPARATION .....</b>	<b>74</b>
<b>TIPS FOR EXAM WRITING AND NERVOUSNESS .....</b>	<b>77</b>
<b>STRATEGIES FOR EXAM WRITING .....</b>	<b>78</b>
<b>HINTS FOR ANSWERING SPECIFIC TYPES OF QUESTIONS .....</b>	<b>79</b>
<b>MANAGING EXAM STRESS .....</b>	<b>80</b>
<b>10. RESOURCES .....</b>	<b>85</b>
<b>WHO YOU GONNA CALL? .....</b>	<b>86</b>
<b>BOOKS AND WEBSITES .....</b>	<b>87</b>
<b>WEEKLY PLANNING SCHEDULE .....</b>	<b>88</b>
<b>SEMESTER TIME MANAGEMENT LINE .....</b>	<b>89</b>

## Introduction

Good study and work habits are learned and practiced over time; they do not magically appear. If you think that you could improve your academic skills and your marks, spend some time reviewing the information in this manual. But don't get overwhelmed. Choose one section at a time to review, and pick only one or two things that you want to change. Be patient with yourself while working toward becoming a more effective and efficient student.

### A Good Place to Start

To find out your strengths and the areas you need to work on, rate your study skills by completing the **Self-Test** (pages 4-5). Total your scores to determine which areas you may need to review, and then refer to that section in the manual.

### A Quick Preview

If you only have a few minutes and want some quick study tips, refer to the beginning of each section in the manual where you will find a **tip sheet**, providing a quick overview of some of the most effective study and organizational tips. These tips are explained in more detail in each section.

### If You Still Need Help

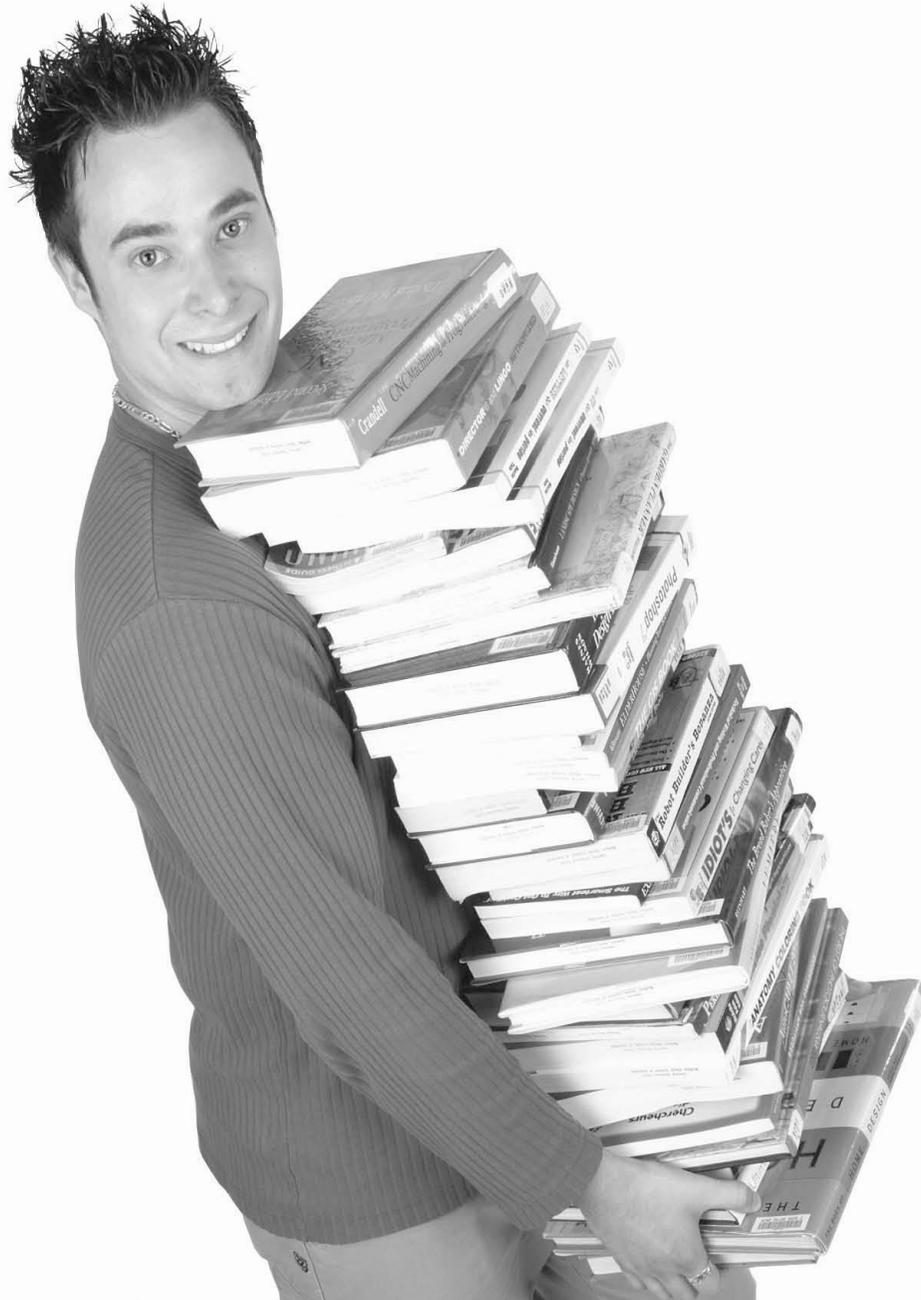
If, after reviewing the manual, you are still concerned that your efforts are not producing the kinds of results you expect, book an appointment with a counsellor in person at Student Counselling, Room W111-PB, HP Centre, or by phone at (780) 378-6133.



# Before You Begin...

*Powerful learning strategies can tame the mountain of learning.*

~ Kiewra and Dubois



**NAIT**

STRATEGIES FOR SUCCESS

COUNSELLING SERVICES

Techniques to Maximize Learning Potential

[www.nait.ca/counselling](http://www.nait.ca/counselling)

## Self-Test: Rate Your Study Skills

Read the following list and check the statements that apply to you. Find your study strengths and the skills you may need to improve upon to be a more successful student.

### Memory and Concentration

- I know when I am most alert, and I use that time to do my most important/difficult work.
- I set a goal for each study period and reward myself when I reach my goal.
- I stay focused when reading or note taking.
- I have effective methods for remembering material for exams.
- I break material into chunks and learn small amounts at a time.
- I take frequent breaks when studying.

### Note-taking and Organization

- The notes I take in class are complete and are a good source of information for exam preparation.
- I label and date every page of my notes and handouts.
- I take notes in point form.
- I look over my notes after class and revise them, marking those ideas that need more explanation.
- My binders are divided into subjects and topics.
- My notes are organized and I can easily find the information I need.

### Study Strategies

- I always read through the objectives before starting to study.
- I vary my study technique with the type of test I will be writing.
- I use several different strategies, in addition to reading, to prepare for exams.
- My study techniques allow me to distinguish between what I have mastered and what I need to learn.
- My study techniques allow me to test my knowledge before I write an exam.
- I avoid cramming by studying for exams over several days.

- ❑ I have the name of at least one classmate in each class whom I can contact to clarify material.
- ❑ I am involved in, or have tried out, study groups.

### **Time Management and Procrastination**

- ❑ I schedule time every day for homework and study.
- ❑ I have regular study areas (one at home, one at school).
- ❑ I write all my assignment due dates and exam dates in my NAIT Students' Day Planner or personal calendar.
- ❑ I start assignments well in advance of their due date.
- ❑ I hand in all assignments on time.
- ❑ I start my homework by doing the most important task first.
- ❑ I attend all classes unless I am very ill or have a personal crisis in my life.
- ❑ I am on time for all classes.

### **Reading**

- ❑ I skim over course or module objectives, the chapter heading, the introduction and summary, and all bold headings before I read a module or chapter.
- ❑ At the end of each paragraph, I try to put the information into my own words.
- ❑ I highlight key points from a paragraph after I have read it.
- ❑ I monitor my comprehension while reading and stop when I am not paying attention or don't understand what I have read.
- ❑ I mark information that I don't understand so that I can ask someone to clarify it for me later.
- ❑ I use chapter/module quizzes to help me retain what I have read.

### **Exam Preparation and Exam Stress**

- ❑ I look over the entire exam before I begin to write it.
- ❑ If I cannot answer a question, I skip it and go back to it later.
- ❑ I always check over my test to ensure that I have answered all questions and have not made careless errors.
- ❑ I am generally calm and confident before exams.
- ❑ I can easily retrieve information that I learned during study time.
- ❑ My test performance usually reflects how well I have prepared for an exam.

Now, add up the number of statements you checked in each section. If you scored less than 75% on any section (less than 4 out of 6 or less than 6 out of 8), this might indicate that you could use a few pointers. Use the following chart to help you pinpoint your strengths and areas of need, then refer to the section(s) in the manual where that topic is covered:

<b>Topic</b>	<b>Your Score</b>	<b>75% Yes/No</b>	<b>Location in Manual</b>
Memory & Concentration			Sections 4 & 5 (pages 17 & 29)
Note-taking & Organization			Section 6 (page 37)
Study Strategies			Section 7 (page 45)
Time Management & Procrastination			Section 3 (page 9)
Reading			Section 8 (page 65)
Exam Writing			Section 9 (page 73)

## Personal Habits to Boost Success

Taking care of yourself during the semester is one of the most important, and one of the most overlooked, factors that contribute to your success. Here are some tips to ensure that you are mentally and physically alert so that you get the most out of studying.

- ❑ **Eat breakfast** – Studies show that students who eat breakfast perform better on cognitive tests, and have better verbal fluency and memory skills.
- ❑ **Drink plenty of water and clear fluids** throughout the day. Dehydration can cause fatigue and poor concentration.
- ❑ **Eat regular, balanced meals and snacks.** Carbohydrates, fats and proteins are all important in a healthy diet.
- ❑ **Maintain a regular bedtime routine.** One of the best things you can do to improve your concentration is to go to bed and get up at the same time every day. The average student needs 7 to 8 ½ hours of sleep per night to maximize learning potential. Don't make the mistake of trying to reset your biological clock every morning according to when your first class starts as this can create a constant state of fatigue.
- ❑ **Get regular exercise.** Exercise increases blood flow to your brain, reduces stress, gives you some downtime from studying, improves quality of sleep, and improves your overall mental and physical health. Try not to exercise within a few hours of going to bed though.
- ❑ Get at least 30 minutes of **sunlight exposure** daily.
- ❑ **Unclutter your study and living environment.** Most students work more efficiently and effectively in a neat, orderly, distraction-free setting.
- ❑ **Set a goal of 100% attendance.** Higher attendance correlates with higher grades. Once you start missing classes it is difficult to catch up on the missed information. Skipping occasional classes often leads to a pattern of missing more and more classes.
- ❑ Reserve **time for recreation.** Taking breaks and having fun helps to prevent burnout.
- ❑ **Plan ahead.** Staying up late to cram for an exam or starting a major assignment the night before it is due can start a cycle of not getting enough sleep, and can also create unnecessary stress. Use a

planner or weekly schedule to plan time in advance of due dates or exams.

- **Limit your use of alcohol.** Heavy alcohol use not only destroys brain cells, but your body takes a long time to recuperate after intoxication. Many drugs also cause effects that negatively affect concentration and learning.
- **Stop smoking.** Carbon monoxide, the poisonous gas caused by smoking, decreases the amount of oxygen your body gets which leads to less energy, slower reaction times and poorer coordination.
- **Get help with personal problems.** Personal issues can drain energy and interfere with concentration, memory and motivation. Free and confidential counselling is available through NAIT Student Counselling.
- **Get help with academic problems early on.** Instructors, classmates, peer tutors and the Tutorial Centre are resources available to you. Attend seminars, book an appointment with a counsellor (Room W111-PB, HP Centre), see the Student Counselling website at [www.nait.ca/counselling](http://www.nait.ca/counselling) and/or keep reading this manual to improve your study skills.

# Time Management

*Procrastination, more than anything else I can think of, separates those who want to be successful from those who are.*

~ Lee Silber



**NAIT**

STRATEGIES FOR SUCCESS

COUNSELLING SERVICES

Techniques to Maximize Learning Potential

[www.nait.ca/counselling](http://www.nait.ca/counselling)

## Tips for Time Management

NAIT students have a demanding course load and numerous assignments. Good time management is one of the most important skills for enhancing success.

- ❑ Take a few days to **monitor how you currently use your time** and then decide where you can make realistic changes.
- ❑ Make **attendance** and arriving on time a priority.
- ❑ Make a daily “to-do” list and **prioritize** it. Always do high priority tasks first.
- ❑ Use your **NAIT Students’ Day Planner** to schedule in all assignment and lab due dates, exam dates, appointments, and personal commitments.
- ❑ Use the **Semester Timeline** at the back of this book. Spare copies are available from Student Counselling.
- ❑ **Organize** your workspace.
- ❑ Do **daily and weekly review**.
- ❑ Spend your time **studying what you don’t know**, not reviewing what you know well.
- ❑ Use your peak energy times for your most important/challenging tasks.
- ❑ Take study **breaks**. Study a maximum of 50 minutes and then take a short break.
- ❑ Monitor and control television, computer and telephone time.
- ❑ Learn to say “**NO**” to activities that don’t fit with your priorities, and be cautious of over-scheduling yourself.
- ❑ Organize your books, clothes and lunch **the night before**.
- ❑ Beware of being a perfectionist.
- ❑ Get into a **regular routine** for sleeping, eating and studying.
- ❑ **Learn from the past**. What could you improve from last week? Last semester?
- ❑ Learn to **manage procrastination**. (See page 14 for strategies).
- ❑ **Prepare ahead** for peak times (e.g. exams).
- ❑ **Ask for help** when you need it.

## Using your NAIT Students' Day Planner

### Your Day Planner should include the following:

- ❑ A copy of your class timetable. The last two pages of the Day Planner provide space for you to write in each semester's timetable.
- ❑ All assignments recorded on the due date.
- ❑ All exams and quizzes recorded on the date and time they will be written.
- ❑ Any appointments or meetings at NAIT or outside of school.
- ❑ Work schedules or activities that change from day to day.
- ❑ Time scheduled for recreation or leisure activities.
- ❑ Phone numbers of classmates.
- ❑ To-do lists. These can be written on a post-it note so the list can be moved to the next day if all items are not completed in one day.
- ❑ A post-it flag marking today's date.

### During the school day:

1. Keep your Day Planner close at hand during classes so that you can record assignments, exams and appointments as they are given.
2. Listen carefully when your instructor gives an assignment or schedules an exam. If you have any questions, ask for more information.
3. Write an entry describing the assignment or exam on the due date.
4. Make the entries brief, but be sure that you can understand them. When you write your entries first write an abbreviation for the subject, then write a note describing the assignment or exam.

### Before you leave school:

1. Check your Day Planner. Decide what homework you need to do during the evening.
2. Gather the materials that you will need for your homework.
3. If you don't understand one of your assignments, ask your instructor or a classmate about it *before* you leave school.

continued ...

## **At Home:**

1. Keep your Day Planner on your desk so that you are aware of what work you need to be completing.
2. First, do the assignments or study for exams that are due tomorrow. When you finish an assignment check it off or highlight it so that you know it is complete but you are still able to see the information.
3. Next, work on assignments or study for exams that are in the future. For large assignments or exams it is useful to divide the work into smaller units and schedule regular times to work on these up until the due date or exam date.
4. If you have any questions, call a friend who may know, or write the question in your Day Planner so that you remember to ask an instructor or a friend on the following school day.

## Perfectionism

Perfectionism usually interferes with, rather than contributes to, success. Perfectionists seldom enjoy their tasks and rarely feel satisfied because they continually push themselves to achieve impossibly high standards. Even if they get some temporary satisfaction, perfectionists usually don't accomplish as much as non-perfectionists because they spend so much time trying to get things just right. In contrast, healthy achievers strive to do well and take pleasure in pursuing their goals rather than feeling stressed that they might not achieve perfection. If you are highly stressed, feel like giving up, or find yourself avoiding necessary tasks, use this as a warning signal. Ask yourself if you are taking on too much or setting unrealistically high standards.

To promote healthy achievement rather than perfectionism:

- Set realistic goals.
- Set limits on how much time you will spend on a project – and stick to these limits. (e.g. Perfectionists will often spend twice the time on projects as non-perfectionists; the extra time spent usually provides little gain).
- Judge yourself by who you are, not by what you accomplish.
- Lighten up by scheduling in free time for fun and relaxation. (This actually makes you more creative and productive).
- Ask yourself, “What is the worst thing that could happen if I don't do this perfectly or if I fail?”
- Look at what you have accomplished in the past and break tasks into small, achievable goals based on your past performance.
- Decide on several things that are really important to you and put your effort into those goals. Lower your standards on other tasks.
- Remember that people learn by making mistakes. If you're not taking risks because you think you might fail, you are probably missing out on a lot of growth and learning.
- Stop chasing the impossible dream. No one is, or ever will be, perfect.

# Managing Procrastination

## Procrastination is:

- The avoidance of doing a task that needs to be done (usually by doing low-priority tasks like socializing, watching television, cleaning, etc.)
- A habit
- Learned, and can therefore be unlearned
- A choice

Procrastination leads to stress and poor performance and increases feelings of guilt, inadequacy, depression and self-doubt.

## How can you conquer procrastination?

Step 1: Admit that you have a problem with procrastination.

Step 2: Carefully examine why you are procrastinating.

- ❑ Are your goals and priorities clear?
- ❑ Are they really your goals, or are they goals that others have set for you?
- ❑ Are your goals realistic?

How are you procrastinating? List the activities that you become involved in when you are avoiding getting your work done, and where and when this occurs:

Avoidance Activity	Location	Time

Step 3: Take action now. Decide on **one or two strategies** that you will use to help combat procrastination:

- ❑ Set **clear, realistic goals**. Write them down in your Day Planner. Keep your Day Planner on your desk while doing homework so that your homework and your schedule is visible.
- ❑ Make a **daily To-Do list** and **prioritize** your tasks. Write the list in your Day Planner, labeling each item with A (top priority), B (things you would like to accomplish) or C (tasks that can wait until another day). Always work on **A priority items first**.
- ❑ Work in a **distraction-free environment**. If there are too many distractions at home, stay at school or go to a library or other quiet location.
- ❑ Complete work first, then **reward yourself**.
- ❑ Use the **5-minute method**. Commit to doing homework or studying for 5 minutes; after 5 minutes decide whether you're going to continue or not. (Usually you will!)
- ❑ Take **frequent breaks**. You will actually accomplish more if you work for shorter periods of time with frequent breaks rather than for one long block of time. Reward your hard work by taking a break every 30 minutes or so, but remember not to get involved in an activity that will be hard to break away from.
- ❑ Break major tasks into smaller pieces and take **one step at a time**. Start with the most difficult or boring task and get it over with first.
- ❑ Make procrastination obvious. Put your To-Do list on the fridge, leave your Day Planner open on the table or leave your books out in a central location.
- ❑ Challenge the faulty thinking that allows you to procrastinate. Keep your list of avoidance activities handy and take note of when you are procrastinating. Watch for statements such as "I don't feel like doing this right now" or "It can wait until later."
- ❑ Get enough **sleep**, eat **regular, nutritious meals and snacks** and **exercise** to control stress. This will help give you the energy needed to stay on track.
- ❑ **Do it now**. Commit to action and get started.

# Goal Setting

## Why should we set goals?

- ❑ Clearly written goals enhance success. Although your main goals right now are likely related to education and career, you may also want to set personal and relationship goals.
- ❑ Setting long-term goals (1 to 5 years) clarifies your direction and helps keep you going when you are feeling frustrated and unmotivated.
- ❑ Short-term goals (for this week, today, or for the next study session) can help you to focus and work efficiently.
- ❑ Set **“SMART” goals**:

**Specific** – Your goal says exactly what you want to achieve.

**Measurable** – You can tell when you have achieved it.

**Achievable** – Winning the lottery might be a nice thought, but it’s not a goal because you don’t have control over it.

**Realistic** – The goal of making \$200,000 within the first year of graduating is probably not realistic!

**Timed** – All goals should have a specific end date.

*“I will finish my lab report by 4:00 on Tuesday”* is an example of a SMART goal; *“I want to spend more time with my kids”* is not a SMART goal. It is too vague, not measurable and has no time limit.

## Record your (SMART) goals:

### Long-term Goals (Achievable within 1 to 5 years):

1.
2.
3.
4.

### Short-term Goals (Things you can accomplish today or this week that will help you to meet your long term goals).

1.
2.
3.

# Principles of Learning and Memory

*Rereading, reciting, recopying, repeating...Re-diculous.*

~ Kiewra and Dubois



**NAIT**

STRATEGIES FOR SUCCESS

COUNSELLING SERVICES

Techniques to Maximize Learning Potential

## Tips to Improve Memory and Learning

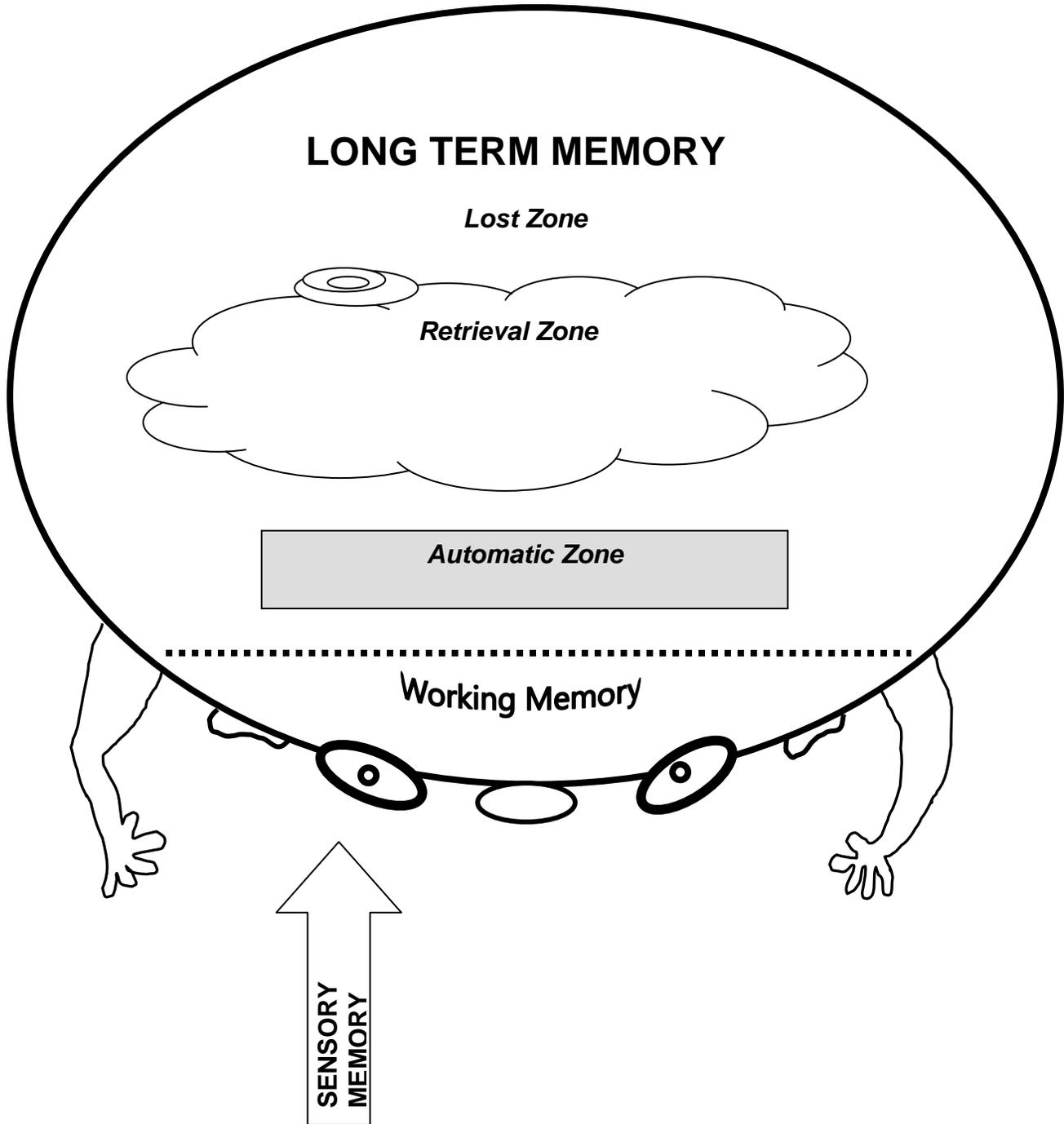
Memory can be improved by using strategies that enhance storage and retrieval of information.

- ❑ Learn from the **general to the specific**. Start by reading the chapter heading, section headings, introduction and summary. You may also want to skim charts and diagrams and other bolded material. Then go back and read for detail.
- ❑ **Review often**, trying to vary the way that you review so that you create more connections to your long-term memory. At a minimum, do daily review and weekly review.
- ❑ Make sure you **understand** the material. Comprehension vastly improves memory.
- ❑ **Visualize** what you are reading or studying. Pictures, shapes and colors are remembered longer than words. Making images colorful, absurd and humorous can help with memory retention.
- ❑ Make new **material meaningful**. Think about how new information is relevant to your life or to your future career, and how it fits with what you already know. Thinking of examples helps with memory retention.
- ❑ Study the **most important material first**. Our minds remember best what they are exposed to first and last, and tend to forget material in the middle.
- ❑ **Learn actively**. Read a small amount, then recite the main points, write notes, do related problems, or organize the material.
- ❑ **Test yourself** as you study. One of the biggest mistakes students make is thinking they 'know' the material just because they understand it as they are reading.
- ❑ Put material into your **own words**. We remember best using our own words rather than those of instructors or textbook authors.

- ❑ Put yourself on an **information diet**. Use course objectives, information the instructor focused on in class and homework assignments to choose the most important areas to study.
- ❑ Break material into small, manageable chunks and learn one chunk at a time.
- ❑ Create pictures or diagrams.
- ❑ If your course involves a lot of memory work commit to memorizing a few points every day.
- ❑ Use **mnemonics** (memory tricks) but use them sparingly as they don't substitute for comprehension and will likely not help with long-term memory.
- ❑ Take short (approximately 10 minute) **frequent breaks**, every 30 to 50 minutes or so. Changing study technique and subject area can also help relieve boredom and increase focus.
- ❑ **Tutor** another student who is having difficulty. Teaching someone else reinforces your own knowledge.
- ❑ **Be positive** – about your ability, your classes and course material and your career direction. Thinking negatively can actually impede the brain's ability to learn and retain information.

# Memory and Recall

The picture below is a conceptual top down view of the human brain, divided into the stages of memory described on the following page. While these stages and zones are not real anatomical divisions in the brain, they help us understand the process of learning.



Most students feel that they are not able to remember as much information, or retrieve what they do know, as quickly as they would like to. While the brain is a very powerful information processing tool that holds more bytes of information than the Library of Congress, what matters, of course, is being able to find or retrieve the information you need when you need it. Understanding how memory works can help students store information in a way that it can be retrieved as needed by ensuring its placement into the Automatic or Retrieval zones.

## **Memory can be divided into three stages:**

### **Stage One: Sensory Memory**

Information is first gathered through your senses (auditory, visual, and kinesthetic/touch) where it is stored before moving on the next stage of memory. Sensory memory is brief but can hold an expansive amount of information.

### **Stage Two: Working Memory**

Working memory is the brain's filter. It is brief (only seconds in duration) and holds between five and nine pieces of information on average. It is more than just short term memory, as it requires you to retain information in your memory while utilizing the learned information to complete a task. This is an active process. If attention is not focused on the relevant information, the information will likely be lost and will not be stored in long-term memory.

### **Stage Three: Long Term Memory**

Long Term memory is, at least theoretically, infinite in both capacity and duration. Unfortunately, information is not always easy to find because of the way it has been stored. You need to ensure that you are engaged in regular review and that you understand what you are learning. It is also important to test yourself to establish where the information has been stored:

**Automatic zone** - information in this zone is recalled without hesitation.

**Retrieval zone** - this is information you can recall with only brief (i.e. up to 20 seconds) hesitation.

**Lost zone** - you require reminders or cues from others to find this information; you cannot easily recall it on your own.

When preparing for exams, use visual, auditory, and hands-on strategies to ensure that information is placed in either the Automatic zone or the Retrieval zone. Information in the Lost zone requires ***elaborate rehearsal***. Elaborate rehearsal is the process of ongoing practice along with efforts to relate new information to previously acquired knowledge. An example of this is when you are required to learn a new mathematical formula. Not only do you need to practice the formula to know how and when to use it, but by comparing the new formula to formulas studied previously, both recall and understanding are enhanced.

## **Memory Principles** *(That will help boost your brain power!)*

Regular review and practice are necessary for learning, but these elements alone do not result in real learning. The human brain is a powerful tool that learns information by making connections with previously learned knowledge. Regular review and practice are tools that we use to ensure that new information is mastered and is readily available when we need to use it. The following are descriptions of memory principles that you can use to make connections between new and previously learned information.

### **Multisensory Effect**

The more senses you use to learn (visual, auditory, hands-on) the greater your brainpower. Not only will you remember information better when you have learned it with multiple senses, but it will be easier to retrieve the information when you need it on an exam, in class, or in daily life. So, whenever you can, practice what you are learning by saying, seeing and doing something.

### **Recency and Primacy Effects**

We remember information better if it is at the beginning or at the end of an event or situation. For example, when you are reading a paragraph you will recall the beginning and end better than the middle. Therefore it is the middle information that we often have to pay the most attention to because it is the hardest to remember. This also reinforces that we should be studying for brief periods of time rather than one long time period, so that lots of beginning and endings are created.

### **Power of Association**

The brain is an associative tool; it remembers information best when ideas are related to each other, or when new learning is linked with old learning. So, when learning something new, ask yourself, “How does this information relate to what I already know?”

### **Humor and Absurdity**

We recall information that is strange, unique, absurd or just plain funny. Adding humor to what you are learning by drawing goofy pictures, making strange associations, or creating bizarre acronyms will capitalize on the fact that the brain will recall information that is outrageous or out of place.

## Similarity Effect

It is easier to remember information that is similar, so grouping information into categories is a good way to maximize your brainpower. This is called “chunking”. For example, try memorizing the following list of words:

mixer  
pencil crayon  
Ferrari  
blender  
Ford  
stapler  
Chrysler  
sharpener  
toaster

Now, try it again when the information is chunked or divided into similar groups or categories:

### Cars

Ferrari  
Ford  
Chrysler

### Kitchen Appliances

mixer  
blender  
toaster

### School Supplies

pencil crayon  
stapler  
sharpener

For most people, it is easier to learn the list when the words are grouped together.

## Learn from General to Specific

For most people, it is easier to learn from general to specific, or whole to part, than from specific to general. This means that you should first understand the main idea or general concept and then the details. Take advantage of this by previewing chapters before reading, taking note of class objectives and topics, and reviewing previous notes prior to class to refresh your recall of what you have already covered.

# Daily and Weekly Review

## Daily Review

Begin daily review on the first day of class, allowing at least 15 minutes per subject. Reviewing your notes within 24 hours moves the material from short-term to long-term memory. **Up to 80% of material is forgotten within 24 hours unless it is reviewed.**

Quickly read through your notes, highlighting the main points and marking any points that need clarification. Mark material that you need to spend more time on. If you have a lot of points to remember, commit to memorizing something every day. Use the PAS study technique described on page 50 to ensure that reading is active and that appropriate review strategies are used early in the semester rather than just before exams.

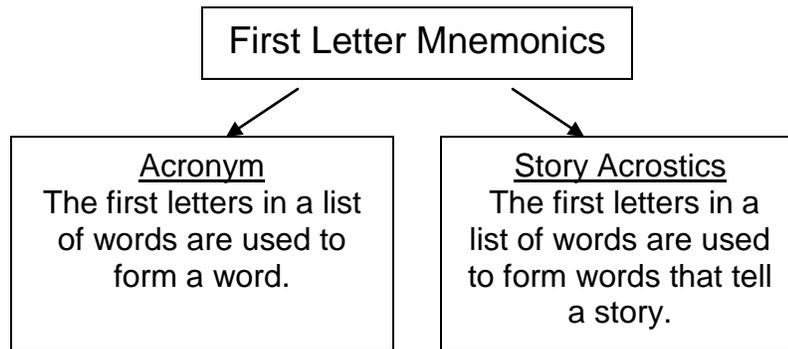
## Weekly Review

Schedule in a regular weekly review in order to go through all of your notes for the week, and to review difficult material from previous weeks. You should allow at least one hour per subject. As you review, **test yourself** on your knowledge and **practice answering questions and problems.**

## Mnemonics (Memory Tricks)

Both memory and understanding are essential to learning. In order to apply information on exams, one must have instant recall of information along with an understanding of that information. **Mnemonic techniques** are specific memory aids. **First Letter Mnemonics** and **The Method of Loci** are mnemonic strategies that you can use when you need to recall specific, detailed information.

1. **First letter mnemonics** - This strategy involves the use of first letters in a list of information. It is useful when there are multiple pieces of information presented in a list or sequence. First Letter mnemonics can be accomplished in two ways:



The following provides an example of an acronym and a story acrostic for the **three trigonometry functions** (S=O/H, C=A/H, T=O/A):

Acronym	Story Acrostic
S (Sine)	Some
O (Opposite)	Old
H (Hypotenuse)	Hags
C (Cosine)	Can't
A (Adjacent)	Attain
H (Hypotenuse)	Husbands
T (Tangent)	Till
O (Opposite)	Old
A (Adjacent)	Age

The **acronym** “SOHCAHTOA” (pronounced “soak a toe a”) is used to remember which function to use when calculating the size of the angle depending on the sides provided.

Alternatively, some students find it easier to remember the story acrostic, “Some old hags can’t attain husbands till old age.” Remember, the more meaningful the acronym or story, the easier it will be to remember.

**2. Method of Loci** - This memory technique is one of the oldest recorded strategies and is the most powerful strategy for memory and recall. It is powerful because it uses auditory, visual and kinesthetic modalities to associate what you do not know (whatever you are learning) to what you do know (location in a room). It is appropriate for information presented in a list such as sequences, steps, processes, events, stages, cycles ...

For example, if you needed to know the eight steps in the accounting cycle, you could use the Method of Loci by associating each step with a location in a room:

Steps in accounting cycle	Location in room	Association
1. Analyze transactions	book	We must analyze the contents of the book
2. Journalize	newspaper	Edmonton Journal
3. Post	Pillar	Pillar is like a post
4. Unadjusted trial balance	Coat rack	Trial balance of coat on rack
5. Make adjustments	Chair	Adjust the height of seat
6. Balance (trial)	Sit on the chair	After adjustment, try balancing on chair
7. Financial statements	Computer	Type statements
8. Close the books	Binder	Close the binder

## Steps to the Method of Loci

**Step One:** Chose a familiar room (e.g. kitchen, living room, study) and begin to make associations between the objects or locations in the room and the information you need to know. In this example, we chose the office or den. Because the first step in the accounting cycle was “Analyze transactions” we chose a book as the first object/location in the room. The association that we used to remember the step was “We must analyze the contents of the book.”

**Step Two:** Choose another object/location in close proximity to the book and find a way to associate it to the second step in the accounting cycle. We chose a newspaper (Edmonton Journal) that was lying next to the book to remember the second step, “Journalize.” This was a logical choice and an easy association to make.

**Step Three:** Continue in a similar fashion, choosing objects/locations within the room and using your imagination to make associations. While some associations are easy to make, others require creativity and a sense of humor. You must, however, select objects in order. For example, if a book was the first location and the newspaper was to the left of the book, you would continue to choose objects in a counterclockwise fashion. If objects or locations are chosen randomly, it will be harder to recall the information.

**Step Four:** Build in plenty of practice.

**Step Five:** When retrieving or recalling the steps during an exam, it is important to first picture the room in your mind, visualize the locations, and then recall the association you have made. For example, to recall the accounting cycle during an exam, you would picture the room, visualize the locations or objects selected, and then try to recall the associations you made to the accounting cycle.

## **Keep it Positive: Three things you can do to build a positive attitude**

**Thinking positively** can actually enhance your learning, help to motivate you and make you a lot more fun to be around. We all carry on silent inner dialogues and, for many of us, a lot of that dialogue is negative. Self-statements like "I'm too lazy", "I'm a procrastinator" or "I can't do this" can become self-fulfilling prophecies. Positive statements such as "I am self-motivated", "I can do it", and "I love to learn" can also be self-fulfilling. Whenever you find yourself thinking negatively try substituting a realistic, positive statement.

**Challenge your faulty reasoning.** Statements like "I always fail" are simply not true. Think of examples where you have been successful. Focus on your strengths and your goals. If you think that you haven't been successful in a particular area in the past then examine what you can do differently and incorporate your new strategies.

**Visualize success.** Picture yourself achieving your goal. Try to make your visualization as specific as possible. A clear picture of success can help you keep going when you are feeling overwhelmed.

**Note: An exam is simply an opportunity to show what you know and to get feedback on that knowledge. It is not an evaluation of your self worth!**

# Concentration

*Some succeed because they are destined to, but most succeed because they are determined to.*

~ Unknown



**NAIT**

**STRATEGIES FOR SUCCESS**

**COUNSELLING SERVICES**

**Techniques to Maximize Learning Potential**

[www.nait.ca/counselling](http://www.nait.ca/counselling)

## Tips for Improving Concentration

- ❑ **Take care of yourself.** Insufficient sleep, lack of exercise and poor eating habits interfere with concentration.
- ❑ Your **study area should be free from distractions.** If you do become distracted, take time to analyze what is distracting you.
- ❑ Make sure your **study area is comfortable**, but not so comfortable that you doze off. Beds and easy chairs are not recommended for study.
- ❑ **Time how long you can concentrate** and schedule your study sessions for that length of time. Usually study sessions should last no longer than 50 minutes.
- ❑ If your concentration time is very short, set a timer for 1 or 2 minutes longer than you usually concentrate and **gradually increase the time** to at least 20 minutes. Don't try to increase too quickly or you will defeat the purpose.
- ❑ Take a **5 or 10 minute break after every study session** and then study a different, non-similar subject.
- ❑ Focus. Use the **Be Here Now** technique (described on page 33) to get the most out of classes and studying.
- ❑ **Learn actively.** It is easier to focus when you highlight, draw diagrams, read out loud, make summary notes, turn headings into questions and try to answer them or use recitation after reading a section.
- ❑ **Break homework tasks down into small, manageable chunks** and work on one chunk at a time.
- ❑ If you frequently find yourself daydreaming or getting distracted use the **Thought Stopping Technique** or the **Checkmark Technique** (described on following page).
- ❑ If your motivation is low or you are worrying excessively, deal with those issues before trying to study.

# Techniques to Help Improve Your Level of Concentration

## Daydreaming

Daydreaming is a common source of distraction and can limit the effectiveness of your homework and study time. The techniques listed below will help you become more aware of your level of distractibility while training your brain to focus for longer periods of time. In just a few study sessions you can dramatically decrease daydreaming. Before you start, though, ensure that your study sessions are not too long (maximum of 50 minutes), that you aren't hungry or tired, and that you are allowing yourself some downtime every day.

### ***Checkmark Technique***

Put a piece of scrap paper near your study area. Every time your mind wanders make a checkmark on the scrap of paper. Next time you sit down to study, set the goal of getting fewer checkmarks. Your mind is competitive and will try to "win" by helping you to focus longer in order to decrease checkmarks.

### ***Thought Stopping***

Every time you find your mind wandering yell "stop" in your head and then go back to studying. To make this even more effective, put an elastic band around your wrist and give yourself a little ping with the elastic band while you are yelling "stop" in your head. Your mind automatically tries to avoid the negative word as well as the pain.

## Worrying

Worrying is another common source of distraction. Did you know that over 90% of what we worry about is futile? Worrying is like a rocking chair; it uses a lot of energy but gets you nowhere. Here are two techniques you can try if you find yourself bogged down by excessive worries:

### ***Problem Solve***

If you find yourself worrying a lot, you should determine a) Is this really a problem? and b) Is there anything I can do about it? If the answer to either question is “No”, then let go of it. If your worry is resolvable, then sit down and clearly define what the problem is, brainstorm possible solutions, and determine the best course of action. You may have to break the solution down into manageable chunks in order to work towards resolution. If you cannot solve the problem on your own, ask for help.

### ***Worry Box***

Another technique, called the “**worry box**”, works for many chronic worriers. Allot time each week specifically for worrying. For the rest of the week, write down each worry when it pops into your head and put the paper into a box. During your allotted worry time go through the contents in the box - you will probably get at least a smile from most of the things you were worried about. Take action (i.e. problem solve) for concerns that you can do something about.

## **Environmental Distractions**

Both noises in and around your study area, as well as visual distractions, can have a significant impact on your study effectiveness. It is important to study in a place that is free of visual and auditory distractions, **especially television and computers, because** they provide both types of distraction.

### ***De-clutter***

It is best to study in a room where you can leave your study materials set up. If that is not possible choose a quiet and clutter-free environment and have study tools (pencils, eraser, scrap paper, etc.) organized so you can set up your study space efficiently. Remove clutter or any items that may distract you from your work. You should only have materials related to the particular subject you are working on placed on your desk. You may need to shift your desk if it is positioned in front of a window or close to other visual distractions.

### ***Block Out Meaningful Noises***

The most important noise to block out is meaningful noise, usually conversations. If you cannot move to a location where there are fewer distractions, earplugs or white noise can help block out unwanted noises. Music can be used to block out other noises, but if the music has words it will likely become a distraction itself. Attention can only be in one place at a time.

## Be Here Now \*

Be Here Now is a powerful tool for enhancing concentration, memory and learning. Be Here Now means staying focused on what you are doing, while you are doing it. If you are not practicing the principle of Be Here Now while studying or doing homework you are not getting the fullest benefit from your study sessions.

Your mind absorbs new material best when you are **fully focusing** on **one** thing at **one** time. Sometimes we need to “multi task” but do not fool yourself into thinking that you are fully focused on your learning at those times.

The Be Here Now technique requires you to let go of distracting internal dialogue and mental images, and be totally in the moment.

### How to “Be Here Now”

1. Notice when you leave the here and now. Notice stray thoughts. Acknowledge and accept them. Tell yourself, “There’s that thought again.” Then gently return your attention to the task at hand.
2. If something is distracting you, get up from your study area and write down the “nagging” thought so you can deal with it later.

\*Adapted from *Becoming a Master Student* by David Ellis

## **Studying with Attention Deficit Hyperactivity Disorder (ADHD)**

ADHD impacts ability to focus and sustain attention on a task or on relevant information. Distractibility, impulsiveness, inattentiveness and disorganization are common characteristics of individuals with ADHD. Hyperactivity may or may not be present. The following is a summary of some of the most important strategies for students who experience difficulty with attention and concentration.

### **In the classroom:**

- ❑ Always attempt to sit near the front of the classroom away from distractions such as windows, doorways, pencil sharpeners or electronic equipment.
- ❑ It may be beneficial to use a peer note-taker so that you can concentrate on the instructor.
- ❑ Taping lectures may help reinforce new material learned in class (you will need to get permission from your instructor and classmates).
- ❑ Attend all classes.

### **When Studying:**

- ❑ Your study area should be as free of distractions and clutter as possible. Have only the material and equipment you are using visible.
- ❑ Before you start to study, write down your goal for the study session.
- ❑ Always do your most important or difficult studying and homework first.
- ❑ Use short study sessions with breaks. Alternate subjects you are studying.
- ❑ While studying, set a timer. Have the goal of concentrating until the timer rings.
- ❑ Gradually increase the time you are trying to focus by 1 to 2 minute intervals.
- ❑ Use study strategies that will keep your mind alert and focused. Don't rely on reading and rereading. Experiment with the different study strategies outlined in this book, and decide which ones help you to focus most effectively.
- ❑ Reading out loud may help you to focus and may increase comprehension.
- ❑ Some students with ADHD find they can focus more effectively when working on a computer.

## **Organization:**

- ❑ Learn to structure your environment. Organize your study space, classroom materials and locker so that materials are in a consistent, easily accessible spot.
- ❑ Post your class schedule in easily visible areas (locker door, front of binder, fridge, etc.)
- ❑ Make a daily list of tasks. Prioritize the tasks and start with the most important ones first.
- ❑ Use your NAIT Students' Day Planner to write down assignment due dates, exam dates and other appointments, plus reminders several days in advance of due dates.
- ❑ Follow a daily routine. Most importantly try to go to bed and get up at approximately the same time each day.
- ❑ Learn time management skills.
- ❑ Control procrastination.
- ❑ Post your Semester Planner (see last page of manual) in a visible place.
- ❑ Enlist a friend, relative, partner or spouse who will encourage you to finish tasks, help you to remember commitments, and provide honest, consistent feedback.

## **Other:**

- ❑ If you are not receiving services from Services for Students with Disabilities, please contact the Academic Success Centre at the HP Centre, Room W111-PB. An advisor can assess your disability documentation and circumstances to determine the appropriate academic supports. Examples of academic supports that may be provided are:
  - Writing exams in a quiet area to help reduce distractions
  - Working with a learning strategist to develop effective learning, study, prioritizing and organizational techniques
  - Working with a tutor to review course content for better understanding
  - Using specialized software to aid in organization and to develop study tools
- ❑ Assessing options for a reduced course load.
- ❑ If you are experiencing stress, frustration or other ADHD-related problems, counselling may be beneficial. Counsellors at NAIT Student Counselling are available to help you.
- ❑ Setting up a self-reward system may help to motivate you.

- ❑ Avoid fatigue.
- ❑ Schedule in daily physical exercise.
- ❑ Maintain a sense of humor.
- ❑ Reduce negative self-statements and substitute positive statements such as, “I can do it” or “I can stay focused”.
- ❑ Learn to control your emotions. Depression, low self-esteem, discouragement and anger can overwhelm students with ADHD. Be prepared with coping strategies to deal with negative emotions.
- ❑ Reduce or eliminate alcohol or drug use.
- ❑ Participate in rewarding activities that will boost your self-esteem.

# Note-taking and Organization

*It aint over 'til it's over.*

~ Yogi Berra



**NAIT**

STRATEGIES FOR SUCCESS

COUNSELLING SERVICES

Techniques to Maximize Learning Potential

[www.nait.ca/counselling](http://www.nait.ca/counselling)

## **Tips for Effective Note-taking and Organization**

- ❑ Review notes from the previous class (or classes).
- ❑ Know the topic of the lecture beforehand, and review the objectives.
- ❑ Divide binders into subjects, and subjects into subtopics.
- ❑ Write the date and the topic on every page including handouts.
- ❑ Write notes legibly, in point form, in your own words.
- ❑ Divide your page into thirds... 1/3 class notes, 1/3 notes from text, 1/3 summary of key points (see Margin Method on page 42).
- ❑ Listen actively and critically. Constantly question, conclude and summarize what is being said.
- ❑ Review notes, adding information and examples.
- ❑ Hole punch all handouts and put them into the binder with class notes.
- ❑ Add diagrams and flow charts to notes.
- ❑ Underline or highlight key words.

## **Binder Organization Checklist**

- ❑ The date is written at the top of each page (notes and handouts).
- ❑ Notes are legible.
- ❑ Keywords (e.g. definitions, headings, names, etc.) are underlined or highlighted.
- ❑ Abbreviations and symbols are used.
- ❑ All notes are in chronological order.
- ❑ Handouts are included in the appropriate place.
- ❑ Dividers are used between subjects.
- ❑ Post-it flags divide topics and mark important information.
- ❑ Diagrams and examples are included when appropriate.
- ❑ Unclear or confusing information is marked with a question mark.

## Strategies for Effective Note-taking

### Before class:

- ❑ Review class notes from previous lectures.
- ❑ Consult the class schedule outline to find the topic and/or objectives of the day's lecture.
- ❑ Complete any required reading.
- ❑ Organize your binders into subjects and divide the subjects into topics. Post-it flags are a great tool for dividing notes into topics.

Note-taking is made easier when you have an understanding of the concepts that the teacher/lecturer is going to cover before class. Preparing for class ahead of time is like looking at a map before you leave on a road trip. It is important to know where you're going before you head off on the highway.

### During class:

- ❑ Listen attentively. This means that you focus on what the teacher is saying by avoiding distractions, maintaining eye contact with the speaker, and writing down important information.
- ❑ Summarize important information in point form. Few people can write everything that the speaker is saying (and it is not usually necessary). Focus on key points only, writing notes in point form in blue or black ink. Use abbreviations.
- ❑ Use the Margin Method of Note-taking described later in this section.
- ❑ When writing notes, be sure to include:
  1. Subject and date at the top of **each page**
  2. Main ideas
  3. Symbols
  4. Flow charts, diagrams, and examples.

Continued ...

## After Class:

- Review notes and add any details that you may have missed during class.
- If notes are unclear, mark information with a flag so that you can clarify it later by consulting your text or by asking a classmate or teacher.
- Underline key words and headings with a colored pen. Add color to diagrams.
- Add diagrams, concept maps and flowcharts where you feel they will help you to understand the information. Post-it notes can be used to add information directly into notes. If you are using the Margin Method, add information onto the column on the right side of the page.
- Keep notes in chronological order in a binder. Write a date on all handouts and add them to your notes.
- If you are unable to take complete notes during class, ask a classmate for a copy of his/her notes.
- You may find that rewriting your notes is helpful because it allows you to review and expand upon your written information, or make your information more concise. Revise and organize while you rewrite. Verbatim rewriting of notes is not good use of study time.

## Common Symbols and Abbreviations

<b>=</b> same or equal	<b>↑</b> up or increasing	<b>w</b> with
<b>≠</b> not equal	<b>↓</b> down or decreasing	<b>w/o</b> without
<b>&gt;</b> greater than	<b>→</b> resulting in	<b>w/in</b> within
<b>&lt;</b> less than	<b>*</b> most importantly	<b>b/c</b> because
<b>~</b> approximately	<b>e.g.</b> example	<b>V</b> very
<b>#</b> number	<b>i.e.</b> that is	<b>esp</b> especially

Perhaps the most useful abbreviations are those that you create for yourself. Be certain to write the term in full along with its abbreviation the first time you use it, so that you can remember what the abbreviation means when you are studying from your notes later.

Example of notes:

April 18, 2005

Canine Parvo Virus

**Clinical Signs:**

- Gastroenteritis (destroyed intestinal villi):
  - Lethargy, anorexia, vomiting accompanied by diarrhea.
  - Often severe, water hose diarrhea, typically containing blood and mucus.
  - Rapid dehydration is a serious consequence, → shock; untreated dogs can die within hours of onset of clinical signs.
    - Signs of shock due to dehydration:
      - Pale mucus membranes (gums and eyes)
      - Sunken eyes
      - Cold extremities
      - Skin tents- loss of elasticity
      - Rapid but weak pulse
      - Weakness progressing to ataxia, unresponsiveness, coma, death.

?

## Margin Method

The Margin Method is an effective note-taking format. It involves dividing your page into three sections as illustrated below.

Date	<u>Topic of Lecture</u>	Additional information is added here after class:
Key words are summarized here	Class notes are written here. - in point form - in your own words - using abbreviations	- notes from your text - examples - diagrams, flow charts

Example of the Margin Method of note-taking:

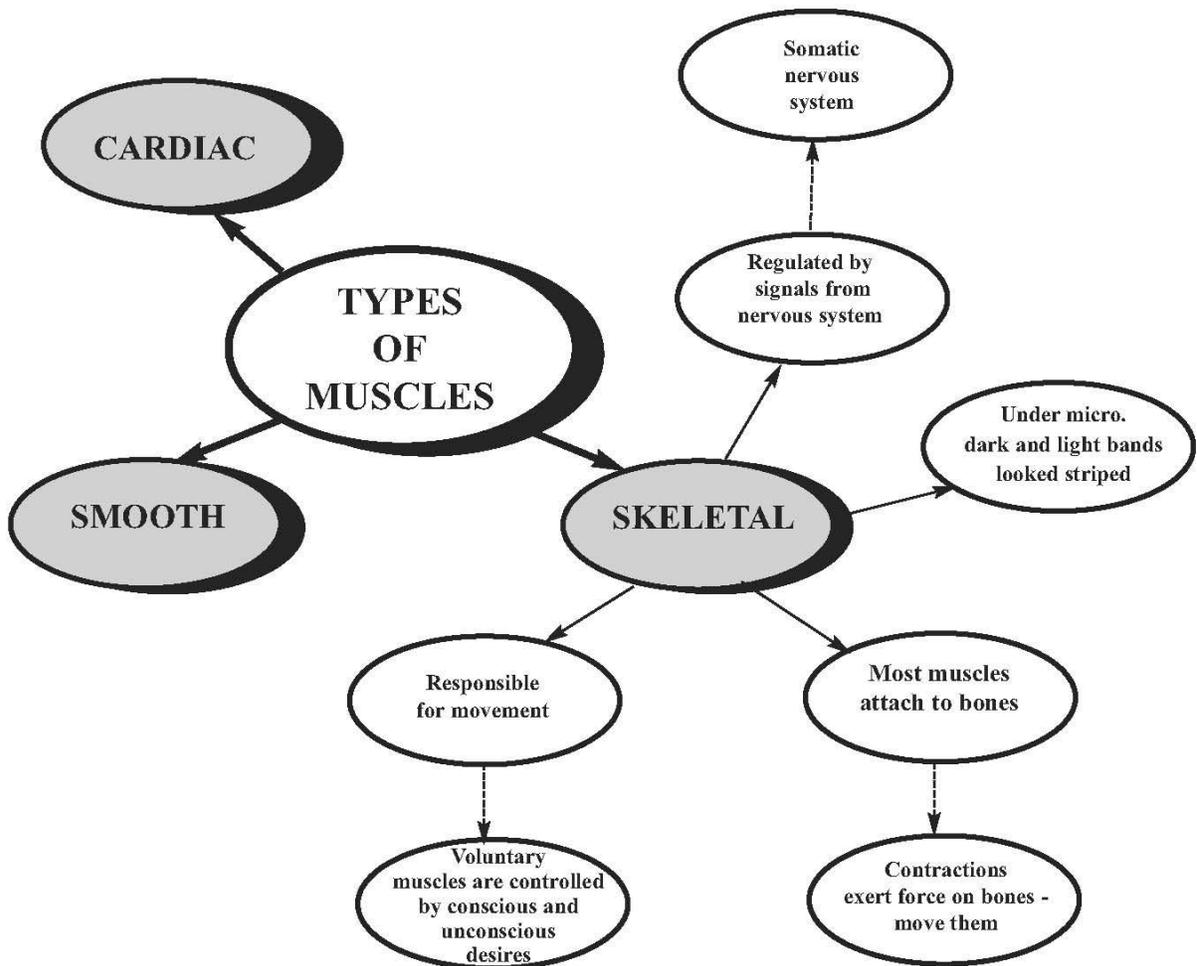
Jan. 8, 2010  3 kinds muscle  Skeletal  Muscle contractions  Voluntary muscles   Striped appearance	<u>Types of Muscles</u>	
	<ul style="list-style-type: none"> <li>• Body contains 3 kinds of muscles: <u>skeletal, smooth &amp; cardiac</u></li> <li style="padding-left: 20px;">1. <u>Skeletal</u></li> <li>• Most muscle attaches to bones of skeleton. Contractions of skeletal muscle exert force on bones and move them.</li> <li>• Skeletal muscles- responsible for movement- voluntary muscles (controlled by conscious desires and by unconscious).</li> <li>• Regulated by signals transmitted by the nervous system (somatic nervous system).</li> <li>• Under microscope, light and dark bands give the muscle a striped appearance.</li> </ul>	

**Test Yourself:** Using the Margin Method, you can study by folding your page back at the left margin so that the key words are hidden from the main notes (or you can simply cover up the notes). Test yourself by trying to explain the meaning of the key word without referring back to the notes. If you cannot do this, you need to spend more time reviewing. You may need to implement other strategies as well.

# Mind Mapping

Mind mapping is an alternate form of note-taking where information is written in a less linear format. This type of note-taking allows students to make better connections between ideas so that the relationships between concepts are more apparent. The example notes on Types of Muscles from the previous page were written using the mind mapping technique.

Jan. 8, 2010





# Study Strategies

*I hear and I forget; I see and I remember; I do and I understand.*

~ Chinese Proverb



**NAIT**

STRATEGIES FOR SUCCESS

COUNSELLING SERVICES

Techniques to Maximize Learning Potential

[www.nait.ca/counselling](http://www.nait.ca/counselling)

## Tips for Studying

- Space study time out over several sessions to ensure long-term retention.
- Review the module or unit learning objectives before you begin studying.
- Quickly review (survey) notes and texts so that you know the topics you need to study and how much time you need to spend studying.
- Establish what study technique would work best for the type of exam and the type of information:
  - Once you have determined the type of material you need to learn, see “Which Strategy Should I Use?” on page 48.
  - Make flash cards for factual information, vocabulary, details and formulas.
  - Create concepts maps including hierarchies, diagrams, sequences and matrices when you need to understand the “Big Picture” (i.e. general concepts) and how one idea relates to another both within and between subjects.
  - Prepare for lab exams by reviewing what, when, why and how you completed the lab.
  - When studying formulas, learn what, when, why and how to use them; don’t just memorize.
- Test yourself frequently. Always separate what you know from what you have not yet mastered, and spend your study time accordingly.
- Form or join study groups.

## Learning Principles

There are many ways to study information to ensure mastery. **Every strategy, however, should utilize all of the following principles:**

1. **Review, review, review.** Learning requires repetition. Regular review and practice leads to long-term retention. Cramming results in short-term recall, but information is easily forgotten.
2. **Ensure understanding.** True learning occurs when information is both understood and mastered. Don't just memorize information; make sure that you understand it.
3. **Make it meaningful.** Learning is easiest when new information is related to previously learned information. When learning new concepts, you should always ask yourself, "How can I relate this to what I already know?"
4. **Self-test.** Never assume that you know information just because you have studied it. Every good strategy allows you to test yourself to see if you really know the information.
5. **Study what you don't know.** Many students spend time reviewing information that they already understand. While it is important to review all concepts prior to exams, it is most important to spend the majority of your time studying information that you do not know. Good strategies allow you to distinguish between what you know and what you do not know, and to focus your attention on what needs to be learned.
6. **Maintain a positive attitude.** Believe in yourself and believe that you can achieve your goals. Positive thinking leads to more action and better results.

## Which Strategy Should I Use?

<b>Type of Material</b>	<b>Strategy</b>	<b>Page Number</b>
Sequences or series of steps	First Letter Mnemonics	25
Sequences or series of steps	Method of Loci	26
Notes taken during lectures, from textbooks, or provided by the instructor	Margin Method	42
Notes taken during lectures, from textbooks, or provided by the instructor	Mind Mapping	43
Chapters, modules or sections of notes	PAS (Preview, Actively Read, Strategize)	50
Definitions, concepts, or facts	Flash Cards	52
Concepts that can be changed or transformed into a visual format	Diagrams	55
Concepts/information whose topic can be divided into subtopics so that relationships among the parts is clarified	Hierarchies	57
Concepts/information that can be organized into steps, stages, events or phases	Sequences	59
Concepts/information that can be compared	Matrices	60
Diagrams, flow charts and other visual information	Blank Diagram Method	63

## Test Yourself

Ideally, any study technique allows you to test yourself and to divide your material into what you know and what you need to study more of. This ensures that you do not waste your time by practicing and reviewing what you already know.

When reviewing, always try to divide your information in two sections:

### **Information I know**

Review this information before the exam, but do not spend much time here.

### **Information I Don't Know**

This is where you need to spend most of your time. Once you have mastered the information, move on to another concept.

### **Test yourself:**

- ❑ Turn headings/topics into questions and say or write the answer.
- ❑ Cover up sections of notes and texts and try to put the information into your own words
- ❑ Practice your flash cards, first by asking and answering the question and, the next time through, by turning the pile of cards over and turning each answer into a question.
- ❑ Turn notes into diagrams, concepts maps, sequences or matrices without using your notes as a reference.

## PAS: Systematic Approach to Chapter and Note Review

**PAS** is a three-step process that provides *a systematic way to implement strategies when studying from textbooks, modules or notes*. It helps ensure that your study time is active, that all information is reviewed thoroughly, and that a variety of strategies are used to study the different kinds of information you need to learn. The three steps are:

1. Preview
2. Actively Read
3. Strategize

**1. Preview** - Quickly scanning the entire chapter, module or section of class notes prior to reading allows you to gain a general understanding of the material and to identify areas in which you already have some knowledge. By transforming the headings into a hierarchy, you will have a visual outline of the topics and main ideas.

When you **Preview**, you can:

	Chapter/Module	Class Notes
Read	Chapter Introduction and/or Learning Objectives	Objectives
Transform	All headings into a hierarchy	All headings into a hierarchy
View	All pictures, graphs and visual aids	All pictures, graphs, and visual aids
Read	Chapter Summary and/or Questions	Quizzes and Assignments

**2. Actively Read** - This means that while you read, you constantly check your understanding and monitor for difficulties. Active reading helps eliminate wasteful and often mindless reading and, although it takes more time initially, it saves time in the long run.

### After each paragraph or section:

- ❑ Turn each heading into a question and see if you can explain the information *in your own words*.
  - ❑ Highlight keywords or phrases. Do not highlight as you read because there is a tendency to highlight too much. ***It is more of an active process to read, then look back and decide what is most important.***
  - ❑ If you do not understand what you read, read the information again. If you still do not understand ask for help or flag the information so that you can get clarification later.
- 3. Strategize** - Implement a strategy. Just reading material does not mean that you will recall it. ***At the end of each section***, decide what strategy would be best for the kind of information or the type of exam.
- ❑ Make flash cards when you need to recall facts, formulas, definitions or events/dates. Chapter questions and quizzes are great sources for creating flash cards.
  - ❑ Create concept maps, diagrams, sequences, and matrices when you need to understand main ideas, theory, or general concepts.
  - ❑ Take notes, using point form and putting the information into your own words.
  - ❑ Use a memory strategy such as First Letter Mnemonics or the Method of Loci when you have a series of steps, a sequence, a list, or events to recall.
  - ❑ Use the Margin Method of note-taking, writing your notes in point form with key words in the margin.
  - ❑ Mark information that you will need to refer back to or information that requires further clarification.
  - ❑ Use the Study Technique for Maps and Diagrams to prepare for any exam where labeling of parts or locations is required.
  - ❑ Complete practice questions at the end of the chapter, module or notes.

## Flash Cards

Flash cards are constructed from index or file cards that can be purchased in any office supply store in a variety of colors. They can be used to study **vocabulary, facts, formulas, and events** ... virtually any kind of information.

### When *making* flash cards:

1. Write only one question along with its answer on each flash card.
2. Write the question on one side and the answer on the other.
3. Use point form.
4. Put information in your own words.
5. Add diagrams and examples to the answer side.

### When *using* flash cards:

1. As you test yourself, divide the cards into two piles: an "I know it" pile and an "I don't know it" pile.
2. Test yourself with both sides of the flash card, once asking the question, and once flipping the cards over and turning the answer into a question.
3. Only stop practicing when all of the cards are in the "I know it" pile.
4. Review all cards regularly to ensure that you know them all with 100% accuracy for your exam.

### *Organizing* your cards:

Flash cards will not be a helpful study tool if they cannot be found. Once made, it is important to develop a system of organization.

1. Store cards in a recipe/index card box. Dividers can be purchased so that cards can be organized by subject. Campus Reads & Needs sells a portable index cardholder with dividers.
2. Cards can be color-coded. If you purchase several colors of cards, each subject can be a separate color, or you can use separate colors for vocabulary, facts, formulas, etc.

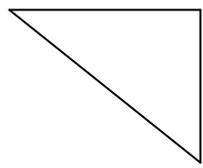
The following are examples of effective flash cards:

Front

Back

Common rise and run of a concrete stair?

250-300 mm



170-190 mm

Carbohydrates?

- Classified as plants
- Starches, sugars, & fiber
- Simple (sugar) or complex (starches, fiber)
- Supply energy

Canine Parvo Virus?

- Water hose diarrhea with mucus and blood
- Sunken eyes
- Anorexia
- Rapid, weak pulse
- Destroyed intestinal villi

What is an expression?

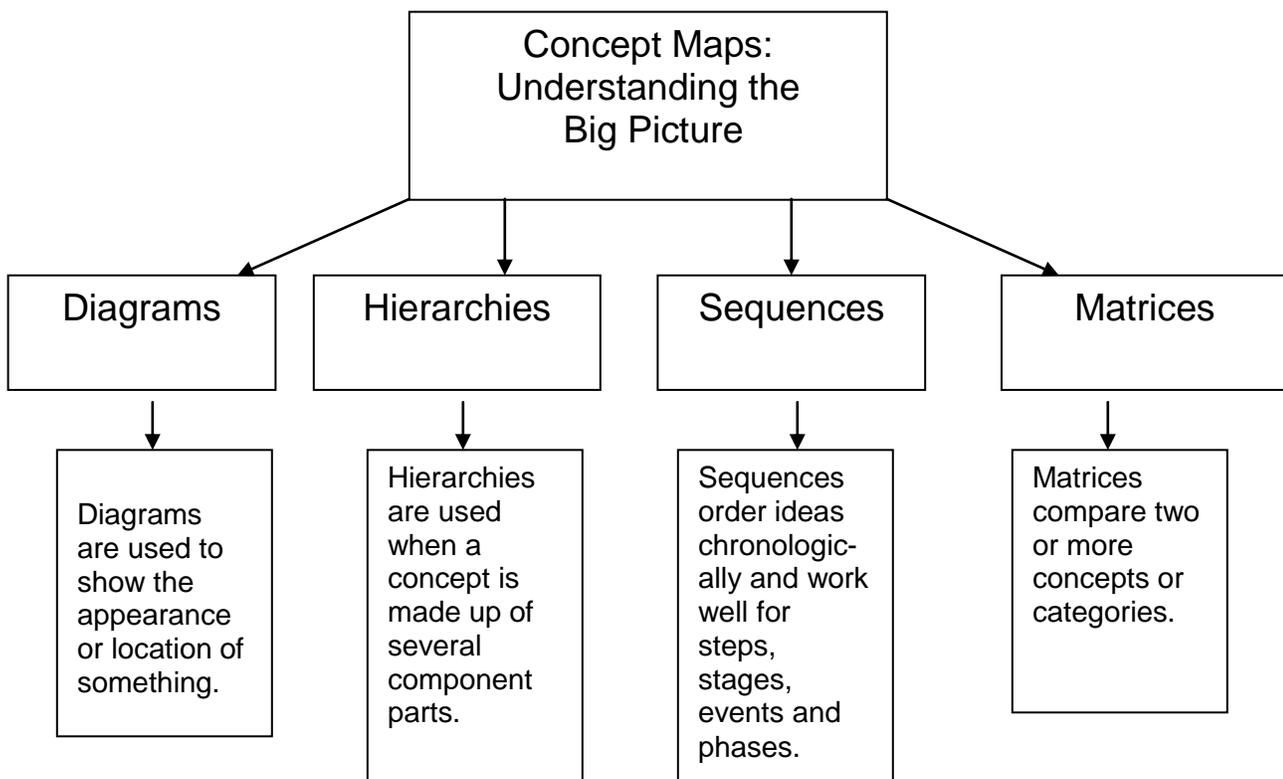
Combining two or more values using some operation: add, multiply, greater than etc.

Value }  
Value } +, x, >...  
Value }

Visit <http://www.flashcardexchange.com> to make and practice flash cards on line.

## Concept Maps

Strategies that make information meaningful are the cornerstone of effective learning. Linear presentations of information (e.g. notes and outlines) often obscure the relationship among ideas. Diagrams, sequences, hierarchies, and matrices provide a structure so that you can ***transform the information into a more meaningful format*** and ***begin to recognize and understand the relationship among the ideas.***



## Diagrams

**Diagrams** turn words into pictures. They can show the appearance and the location of parts of something, or they can show how parts are related to each other. The visual image is often much easier to recall than a paragraph of words. The following class notes on Canine Parvo Virus were transformed into the diagram located on page 56.

### Canine Parvo Virus – Class Notes

#### **Clinical Signs:**

- Gastroenteritis (destroyed intestinal villi):
  - Lethargy, anorexia, vomiting accompanied by diarrhea.
  - Often severe, water hose diarrhea, typically containing blood and mucus.
  - Rapid dehydration is a serious consequence, leading to shock; untreated dogs can die within hours of onset of clinical signs.
    - Signs of shock due to dehydration:
      - Pale mucus membranes (gums and eyes)
      - Sunken eyes
      - Cold extremities
      - Skin tents - loss of elasticity
      - Rapid but weak pulse
      - Weakness progressing to ataxia, unresponsiveness, coma, death.
- Not all cases are as severe, at least initially; however, all suspect cases must be treated as potentially life threatening; strongly encourage clients to bring suspect dogs to the clinic.

#### **Treatment:**

- ISOLATION WARD
- IV fluids to combat dehydration and shock is the mainstay of treatment.
- NPO (nothing “per os”- by mouth) while the damaged intestinal tract heals.
- Parenteral antibiotics are indicated because compromised gut epithelium allows escape of intestinal bacteria into the blood stream.
  - Ampicillan & Gentamicin
- Upon recovery, small amounts of bland diet.

# Canine Parvo Virus

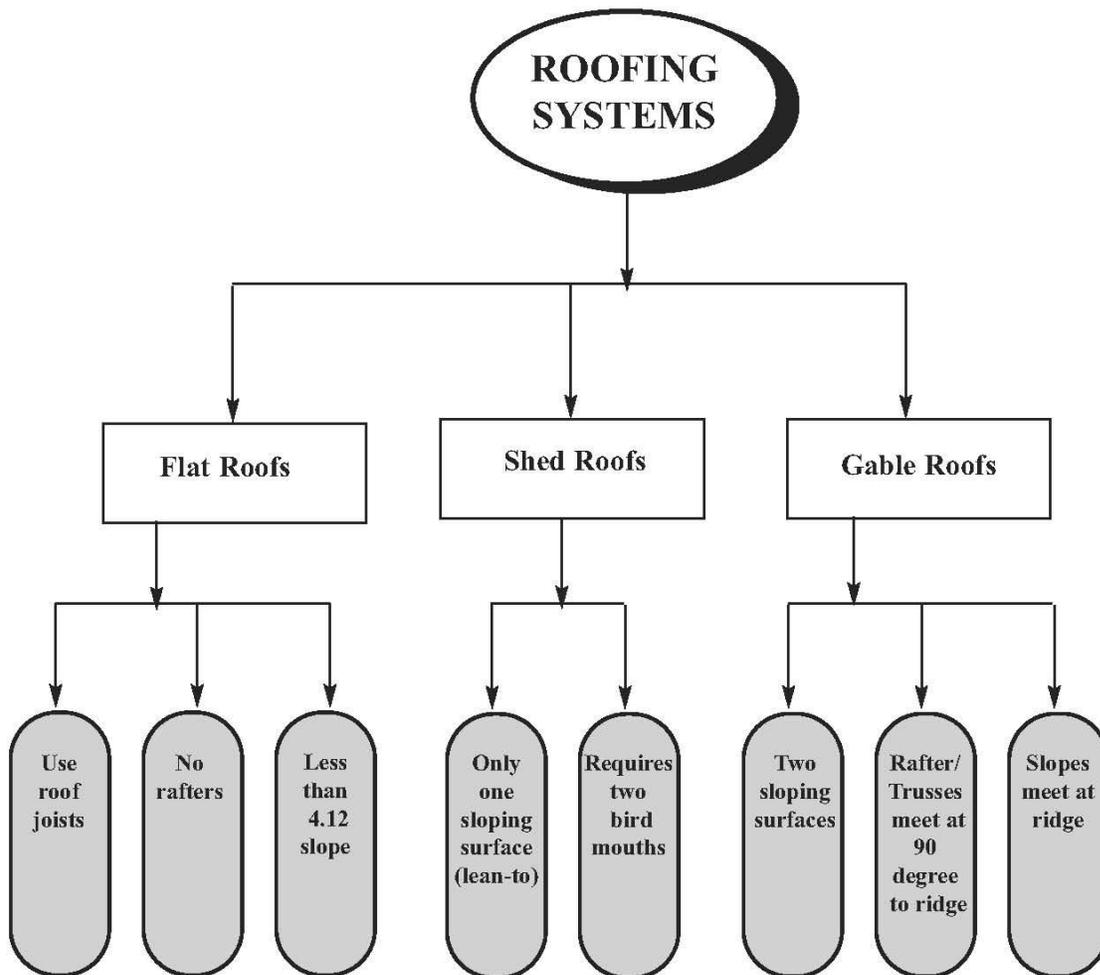


While not all of the information from the notes was added into the diagram, the main points were included. Additional details could be added to the diagram, or could be learned using other strategies (e.g. flashcards, matrices, sequences).

# Hierarchies

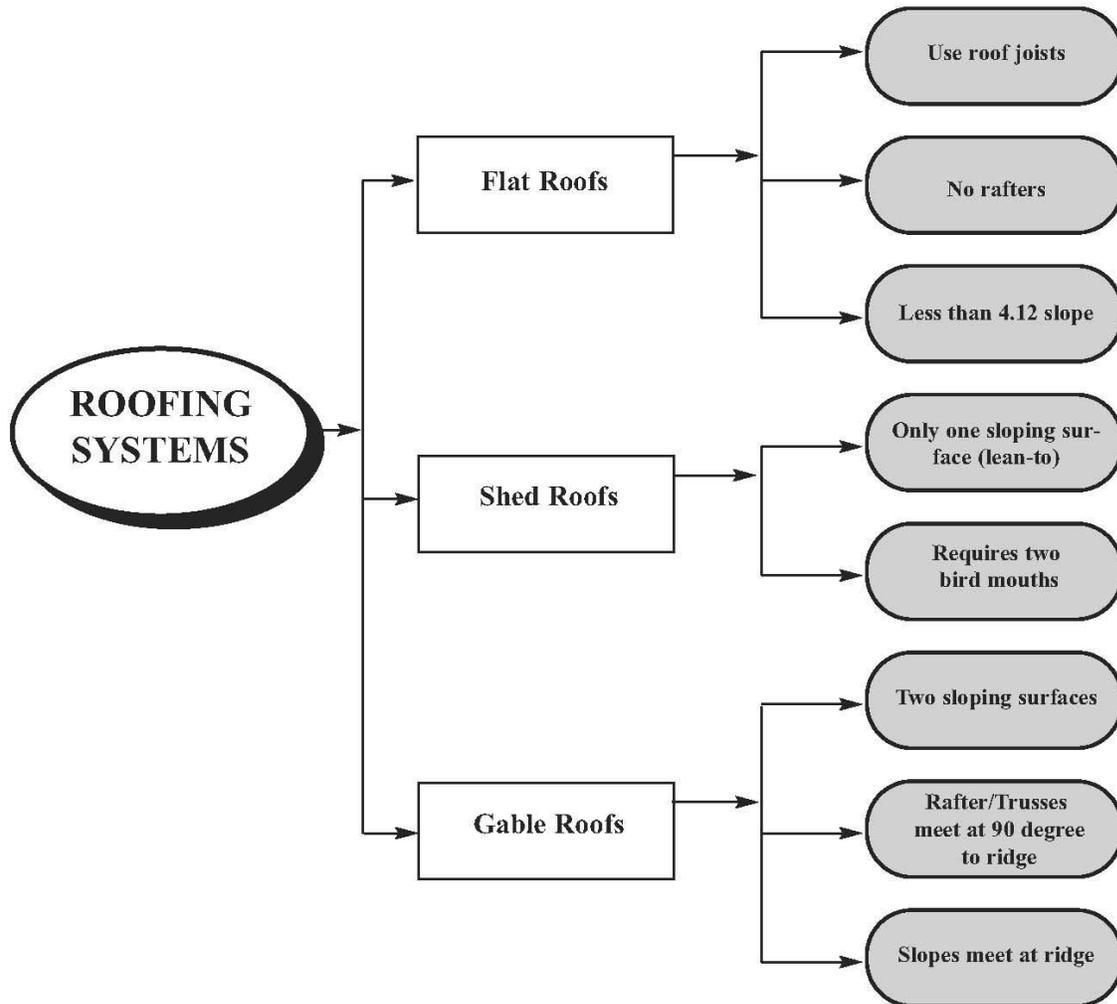
A **hierarchy** transforms linear information so that the relationships between the concepts are more obvious. A hierarchy organizes ideas into levels or groups by placing general ideas above more specific details. For example, the hierarchy below was created from a section of a Carpentry module on roofing systems.

## Vertical Hierarchy



The same hierarchy can be reproduced in a horizontal orientation. While the vertical hierarchy works best for paper in the portrait orientation, many students prefer the horizontal orientation.

### Horizontal Hierarchy



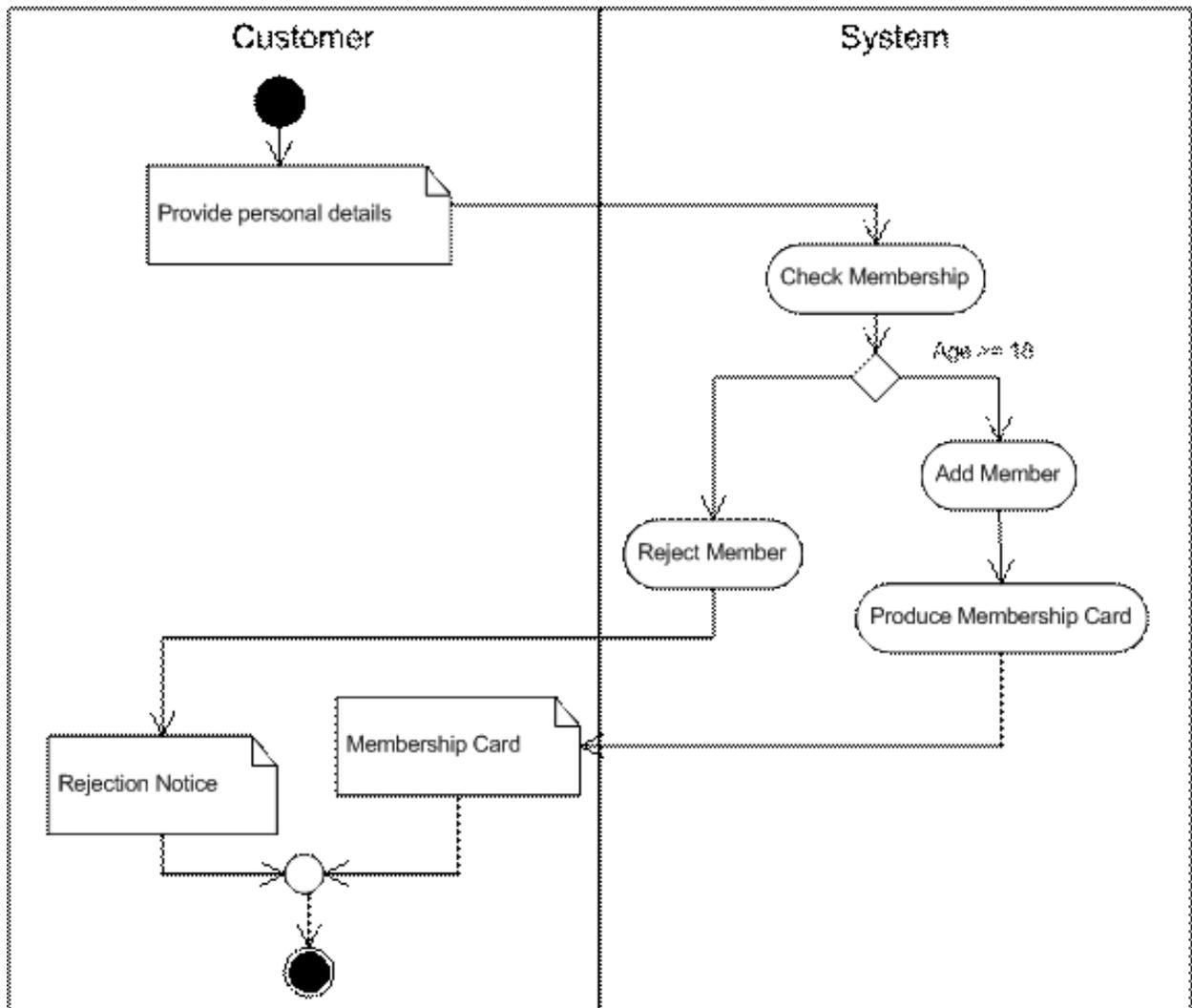
Hierarchies can be created by hand (i.e. pencil/pen and paper) or by using various computer software tools including Inspiration software. For more information on this learning tool, visit [www.strategictransitions.com](http://www.strategictransitions.com).

# Sequences

**Sequences** order ideas chronologically. They show the order of steps, events, stages and phases. They can also show cause and effect relationships.

The following is an example from a Digital Media and Information Technology (DMIT) student. The student transformed a narrative explaining how to add a member to a reservation system into the sequence (“activity diagram” in DMIT language) below.

## Activity Diagram



## Matrices

**Matrices** are used to compare and combine information. They allow you to condense a large amount of detailed information into a simple format.

**Example Matrix: Vitamins and Nutrition**

Vitamin	Function	Source	Deficiency Disease
Vitamin A	<ul style="list-style-type: none"> <li>• Normal vision</li> <li>• Reproduction</li> <li>• Healthy epithelial cells</li> <li>• Bone growth</li> </ul>	<ul style="list-style-type: none"> <li>• Milk</li> <li>• Eggs</li> <li>• Carrots</li> <li>• Broccoli</li> <li>• Yams</li> </ul>	<ul style="list-style-type: none"> <li>• Blindness</li> <li>• Failure to grow</li> <li>• Poor bone growth</li> </ul>
Vitamin B	<ul style="list-style-type: none"> <li>• Release energy from foods</li> </ul>	<ul style="list-style-type: none"> <li>• Cereals</li> <li>• Whole grains</li> <li>• Fruits</li> <li>• Vegetables</li> <li>• Milk</li> <li>• Meat</li> <li>• Eggs</li> <li>• Cheese</li> </ul>	<ul style="list-style-type: none"> <li>• Beri beri (mental confusion, lack of coordination, muscle weakness)</li> <li>• Pellagra - (4 D's- diarrhea, dementia, dermatitis, death)</li> <li>• Anemia</li> <li>• Birth defects</li> </ul>
Vitamin C	<ul style="list-style-type: none"> <li>• Collagen - cellular cement</li> <li>• Fights infections</li> <li>• Antihistamine</li> <li>• Helps absorb iron</li> </ul>	<ul style="list-style-type: none"> <li>• Citrus fruits</li> <li>• Potatoes</li> <li>• Onions</li> </ul>	<ul style="list-style-type: none"> <li>• Scurvy: bleeding, loose teeth</li> <li>• Easy bruising</li> </ul>
Vitamin D	<ul style="list-style-type: none"> <li>• Regulates calcium</li> </ul>	<ul style="list-style-type: none"> <li>• Sunshine</li> <li>• Egg yolk</li> <li>• Liver</li> <li>• Milk</li> <li>• Fish oil</li> </ul>	<ul style="list-style-type: none"> <li>• Rare</li> <li>• Anemia</li> </ul>
Vitamin K	<ul style="list-style-type: none"> <li>• Blood clotting</li> </ul>	<ul style="list-style-type: none"> <li>• Cabbage</li> <li>• Kale</li> <li>• Dark Greens</li> <li>• Intestinal bacteria</li> </ul>	<ul style="list-style-type: none"> <li>• Failure of blood to clot</li> </ul>

## Study Technique for Laboratories

Preparing for a lab exam may involve recalling the steps that were performed during the lab as well as the purpose and the outcome of the lab. Summarizing each lab onto a matrix allows you to ensure that you know what occurred during each lab while providing a way to compare one lab to another. Of course, the questions would vary depending on the type of lab, but your summary should answer most of these questions:

- ❑ **What:** What procedure did you perform and what equipment/supplies were used?
- ❑ **When:** When would you use such a procedure?
- ❑ **Why:** Determine what circumstances or reasons would necessitate this procedure.
- ❑ **How:** What were the steps for this procedure?
- ❑ **Implications:** Understand the possible results of completing the procedure.
- ❑ **Solutions:** Determine the steps/procedures necessary to rectify the results if the required results are not achieved.

Here is an example of how to organize a matrix based on the questions above:

	Lab #1	Lab #2	Lab #3
What?			
When?			
Why?			
How?			
Implications			
Solutions			

## Study Technique for Quantitative Content (Math, Calculus, Statistics, Accounting)

Preparing for a math test or any other quantitative exam involves repeated practice to ensure that you are able to complete the required calculations or procedures. However, you must also know *when* to apply *which* formula. For each formula/procedure you must know:

- **What:** Determine what type of procedure it is.
- **When:** Determine when you would perform this procedure.
- **How:** Determine the steps for this procedure?

Several formulas or procedures could be compared on a matrix with the format below.

### Study Matrix

	Formula 1	Formula 2	Formula 3
	e.g. $R_T = R_1 + R_2 + R_3$		
What	Calculates total resistance		
When	In Series circuits only		
How	Add the individual resistances to equal the total		
Example			

## Study Technique for Diagrams and Maps

This strategy is used when you need to master specific, detailed information on diagrams or maps. It requires a sheet of acetate (overhead transparency), a water-soluble pen, and a blank copy of the diagram you need to learn.

### Step One

Obtain a blank copy of the diagram that you need to learn. If your instructor cannot provide one for you, you can quickly sketch one of your own, photocopy a blank copy, or cover up the information on the labeled copy you are studying using post-it notes or flash cards.

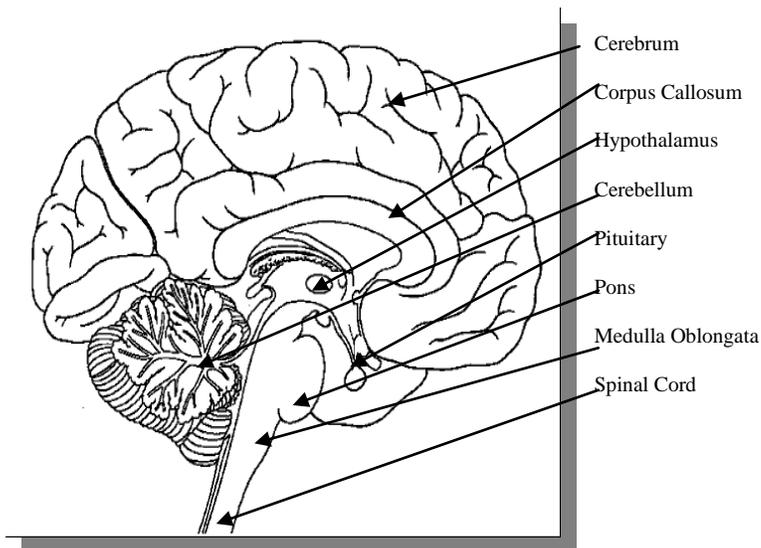
### Step Two

Study the information you need to learn and then, place the acetate over the blank copy of the diagram. With a water-soluble pen, try writing in the information that you need to know without looking at the completed diagram. (A fine-tipped overhead pen works best for this.)

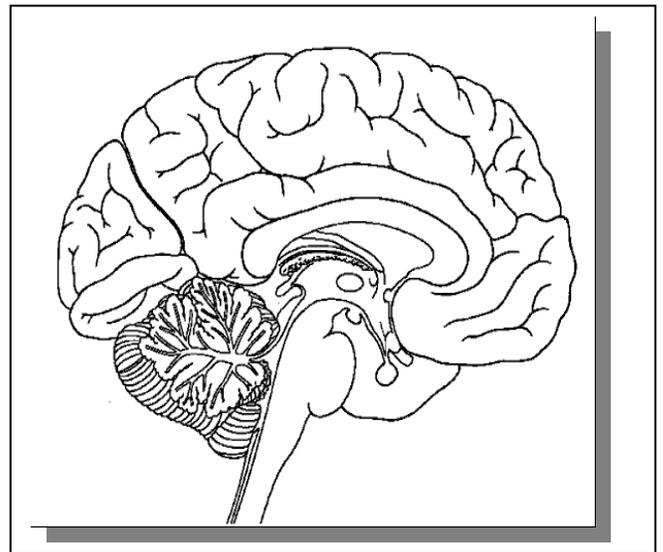
### Step Three

Once you have written everything that you know, check to see how much you got correct by placing the acetate over top of the original diagram. Next, correct the information that you did not have right, then wipe off the acetate using a damp paper towel. Continue to practice until you get all of the information correct.

Original Diagram with labels



Blank Diagram with acetate on top



## Studying in Groups

While most of your study/review should be done alone, many students find that study groups can be beneficial.

### Why use study groups?

- ❑ Study groups give you an opportunity to share materials/resources and to clarify understanding of ideas, concepts, theories, etc.
- ❑ Study groups can provide a venue to test one another regularly.
- ❑ Study groups allow you to see material presented in alternative ways than those that were presented in class.
- ❑ The material is often put into your own words which enhances the likelihood of effective recall.
- ❑ Teaching is the most effective way to master information.

### The following is a list of guidelines for developing effective study groups:

1. Form a study group of 3 to 5 serious members for each of your classes.
2. Establish group rules or guidelines.
3. Schedule weekly meetings.
4. Make practice tests and generate content summaries.
5. Take turns teaching each other course content.
6. Be prepared for each study session by completing reading and assignments as well as attending all classes.
7. Stay on task – keep it a study group not a support or “gripe” group.
8. Be cooperative not competitive.
9. Ask “non-contributors” to commit to making a contribution or leave the group.

***Caution: Make sure that the focus of your study group is studying, not socializing.***

# Reading and Listening

*"... observe the postage stamp! Its usefulness depends upon its ability to stick to one thing until it gets there."*

~ Henry Wheeler Shaw



**NAIT**

STRATEGIES FOR SUCCESS

COUNSELLING SERVICES

Techniques to Maximize Learning Potential

[www.nait.ca/counselling](http://www.nait.ca/counselling)

## Tips for Reading and Listening

- ❑ Choose a **quiet, well-lit place** to read.
- ❑ **Preview** the chapter or section before you start reading.
- ❑ Know the **purpose** of reading the material before you start.
- ❑ **Read actively** to get information from the material.
- ❑ **Highlight main points after** you have read a paragraph.
- ❑ Stop after every paragraph or section to **recall** what you have just read.
- ❑ **Mark difficult sections** that will need further review.
- ❑ Read material in **small chunks**.
- ❑ **Review** what you have read within 24 hours.
- ❑ Read with a **dictionary** nearby.
- ❑ **Vary your reading speed** depending on the complexity of the material.
- ❑ Before class **skim the material** that will be taught to gain a basic overview.
- ❑ In class **watch for cues** that indicate important information.
- ❑ As you listen, **compare new information** with what you already know.
- ❑ **Ask questions** in class if you are not clear on the material being presented.

## Reading to Remember

Reading scientific or technical material can be demanding. These strategies will help with understanding and retention of information.

- 1) **Preview** the chapter by looking over titles, introductions, subheadings, figures, diagrams, italicized or boldfaced words, and the summary or conclusion. Think about what you already know about the topic before you begin reading in detail. Look at the course objectives to determine the purpose of reading the material.
- 2) **Question:** Look ahead at assignment or end-of-chapter questions, or turn the boldfaced headings into as many questions as you think will be answered in the section. Keep the course objectives in mind when formulating questions.
- 3) Then **Actively Read**. Read with the purpose of getting the main concepts, focusing on the material that is highlighted in your course outline and during lectures.
  - Read to **answer questions** or to find specific information.
  - **Visualize** what you are reading.
  - **Use a highlighter** but highlight no more than 10% of the text. It is best to read a paragraph first and then go back and highlight the main points.
  - Stop after reading every paragraph or subsection to **recall** what you have read. Tell it to yourself in your own words.
  - Write down **procedures in step form** in your own words.
  - Translate **abstract formulas into verbal** explanations.
  - Draw your own **diagrams or charts** to illustrate and explain problems, or to summarize material.
  - Try to read dense material in **small blocks**. For example, read one section in your textbook and then make some notes or do some questions related to it.
  - Try to see the **bigger picture** as you read. How does this material relate to other material in the course and in other courses? How will this material be useful in your field of study or career? How is it related to something you already know?

- ❑ Try to **make connections** between main ideas, supporting ideas and details.
  - ❑ **Vary your reading speed** depending on the difficulty of the material.
  - ❑ As you read **anticipate possible exam questions** and the responses.
  - ❑ Read with a **dictionary** nearby.
  - ❑ Try to create a **single study source**. Leave space in your lecture notes (a column on the left of your page, room at the bottom of the page or the back of the previous page in your notebook/binder) to supplement your notes with information from textbooks.
  - ❑ Continually **check your understanding** of the material. Mark any information you don't understand and make sure to get clarification from your instructor or classmates.
- 4) **Review**. To effectively retain new material review it within 24 hours and again within the week. Your review sessions should involve a strategy that will help you to remember and understand the material such as flash cards, summarized notes, diagrams or concept maps.
- 5) **Read ahead**. Skim the related chapter before class trying to pull out major ideas. Having a general idea of the material will help you to get more out of the lecture.

## Improving Your Study Reading Skills

Improving your reading skills really boils down to increasing your speed and improving your comprehension.

### How fast do I read now?

The average college student reads between 250 and 350 words per minute when reading fiction or other non-technical materials. A good reading speed to aim for is between 500 to 700 words per minute for this type of material. To determine your current reading rate take some non-technical reading material, such as a novel or long magazine article, mark the beginning of the selection, set a timer for 5 minutes and then mark where you get to when the timer rings. Count the number of words you have read and divide by 5 to determine your reading rate.

Just reading faster will not improve reading comprehension, however learning good reading techniques will improve both speed and comprehension.

### How much am I comprehending?

Understanding the material you read is critical. If you just memorize information you will not be able to apply it on exams or in real life situations. A rough estimate of whether your comprehension is adequate is to jot down the main ideas from the 5-minute selection you just timed yourself on without referring back to the material. You should remember about one main idea per minute of reading, so if you can recall 5 main ideas your comprehension rate is good. It is a good idea to do this type of self-test regularly while you are reading your course materials.

### What slows reading down?

Reading word by word, mouthing or vocalizing words, not sweeping your eyes ahead to the next words or the next lines soon enough, letting your eyes wander and poor concentration will slow your reading speed. Lack of reading practice and being in the habit of reading slowly are also common factors that decrease reading speed.

### How can I improve my reading rate?

- The key to increased reading rate is consistent practice. Set your target slightly higher than your initial reading rate and then practice at least 15 minutes each day, pushing yourself to read more quickly.

Check your rate every so often and increase by small increments as your reading rate improves.

- ❑ Practice moving your eyes more quickly over the text by taking the next 5 or 6 words into your vision and by moving your eyes more quickly to the next line.
- ❑ Some students find it helpful to read with an index card or ruler *above* the line they are reading (never use a ruler below what you are reading as this gets your eyes into the habit of moving slowly to the next line). Cover the line you have just read immediately to prevent yourself from re-reading it. This also helps to improve concentration.
- ❑ NAIT has SpeedReader, a computer program designed to increase reading speed and comprehension, at research stations in McNally Library, Room U310. Staff at the library Help Desk can assist you.

### **How can I improve my comprehension?**

- ❑ Always read in a distraction-free environment. Set aside specific time to be used for study only. Turn off your cell phone and other distracting devices. Ensure that you are alert and relaxed.
- ❑ Read early in the day. Comprehension and concentration decrease when you are tired.
- ❑ With LOGs (Learning Outcome Guides) or course objectives in mind think about what specific questions you want to answer, what terms you need to learn and what concepts you need to understand.
- ❑ Read with the goal of understanding and remembering the material, not just of completing the chapter.
- ❑ Allow adequate time to read the chapter thoroughly.
- ❑ Skim the chapter first. Most textbooks are designed to help you by providing major headings, italicized or bold words, summaries, chapter questions, lists of main points and repetition of information.
- ❑ Read for a short interval (20 to 30 minutes), take a break and then read for another 20 to 30 minutes. Short intervals will improve comprehension due to recency and primacy effects (see page 22).
- ❑ Alternate subjects you read, and alternate reading with more active homework such as problem solving.
- ❑ Make sure you are reading in a quiet location that has appropriate heat, lighting and ventilation.
- ❑ Active listening will improve comprehension.

See a counsellor at NAIT Student Counselling for further assistance with reading concerns.

## Active Listening\*

By developing effective listening skills, you will get more out of lectures and reduce the amount of time you spend studying.

### **The following techniques may help you become a better listener:**

- ❑ Show up for class with the intent to listen actively (as opposed to passively soaking in information).
- ❑ Learn the clues/cues your instructor gives to indicate he/she is sharing important information (these may be certain words, phrases, gestures, voice inflection or tone of voice changes).
- ❑ Listen critically by silently questioning what you are hearing.
- ❑ Draw conclusions about what you are hearing (but keep an open mind).
- ❑ Think about relationships between new information and what you already know (this will enhance learning and recall).
- ❑ Ask questions. Clarify points you are unsure of.
- ❑ Be an “information filter”, filtering out what is important and focusing less on the minor details (always tie information back to course objectives or LOGs).
- ❑ Display openness by your facial expression and body position (sit up straight and lean slightly forward to convey interest).
- ❑ It is beneficial to skim read the material the night before class. Reading or skimming ahead gives you an overview of the material which will help you to understand the lecture content more thoroughly.

*\*Adapted from “Study Smarter not Harder” by Kevin Paul, M.A*



# Exam Writing & Stress Management

*There is no such thing as failure, only feedback.*

~ Anonymous



**NAIT**

STRATEGIES FOR SUCCESS

COUNSELLING SERVICES

Techniques to Maximize Learning Potential

[www.nait.ca/counselling](http://www.nait.ca/counselling)

## Exam Preparation

Exam preparation should be ongoing and, ideally, should start the first week of classes using a variety of the techniques previously outlined in this manual. See the 'Principles of Learning & Memory' and 'Study Strategy' sections for specific learning techniques.

### During the course:

- Attend all classes.
- Take clear, complete and organized notes.
- Keep up with homework and reading assignments.
- Find at least one study partner in each class.
- Ask for help when you need it (from instructors, peers, tutors).
- Decide where and when you study most effectively.
- Develop an attitude that all study is "exam" study.

### Be diligent about ongoing review:

- Begin to review the first week of class.
- Review all new material daily and weekly.
- Work at understanding the material fully, not just memorizing it.
- Focus on what the material means and how it can be applied.
- Link new material to previously learned material.
- Frequently test yourself on your knowledge of the material
- Look for the "big picture"- how could this apply to industry or business?

*(Thorough ongoing preparation is the best remedy for managing exam stress).*

**Take care of yourself. If your physical, emotional and psychological needs are neglected you will not be able to achieve your full potential.**

### One to two weeks before the exam:

#### Have a plan for your MAJOR review

- Begin 1 – 2 weeks before major exams.
- For each exam prioritize what you need to know based on what topics will be on the exam, the course outline, LOG (learning outcome guide), and the weighting of the exam.
- Ask your instructor what the exam format will be (e.g. multiple choice, short answer, long answer).

- Do a 30-minute overview of each course.
- Create review tools such as checklists, summaries, flash cards or mock exams.
- Plan a realistic schedule for each exam and prioritize according to the exam's weighting and difficulty, as well as how you are doing in the course.

### **Study ACTIVELY**

- Gather all resources needed to prepare for the exam (text, notes, complete assignments/labs).
- Do intense review for all the topics on your list. Do not just read and re-read the material.
- Practice the tasks you will do on the exam.
- The remainder of your study time should be spent utilizing active study approaches like putting material into your own words, teaching the material to someone else, making flash cards, utilizing mnemonic devices, and creating visuals such as concept maps or diagrams.
- Review old quizzes, exams, problem questions and chapter-end questions.
- Experiment with different memory and learning techniques to see which work best for you.
- Don't spend much time on what you already know.
- Test yourself frequently to determine what you truly know. Keep testing yourself on material that you are weak on.
- Over learn material - go beyond basic recognition or marginal recall. Put material in your own words to ensure genuine understanding, and practice applying the material using problems, case studies, etc.

### **Day(s) before the exam:**

- Check the location and time of the exam.
- Get adequate sleep and exercise.
- Limit coffee, alcohol, and caffeinated food/beverages.
- Eat well balanced meals.
- Get all you exam "tools" ready the night before – have them waiting by the door.
- Maintain a positive attitude.

**Day of the exam:**

- Do not try to learn something new hours before the exam; in fact, for most students it is best not to study on the day of the exam.
- Be careful not to compare yourself to others or berate yourself for not studying more.
- If you feel overly anxious take steps to relax yourself such as deep breathing or a brisk walk.
- Arrive early but not so early that you get anxious.
- If possible, avoid talking to other students and/or avoid talking about the exam material (anxiety spreads).

**How to Cram (if you absolutely have to!)**

- Be realistic. Prioritize and focus on the basics (e.g. chapter summaries, review sheets).
- Cram as close to the exam as possible (but not all night).
- Get some sleep.

## Tips for Exam Writing and Nervousness

- ❑ Be extremely well prepared for exams by reviewing daily and weekly.
- ❑ Use effective exam preparation and writing techniques.
- ❑ Test yourself at regular intervals to determine if you truly know and understand the material.
- ❑ Get adequate exercise, nutrition and rest, especially before exams.
- ❑ Identify and remove sources of anxiety.
- ❑ When you first receive your exam, look it over quickly to get a feel for the questions. Read directions carefully.
- ❑ Start with the questions you know well.
- ❑ Underline key terms and information.
- ❑ Work at a reasonable pace, even if you don't complete the exam.
- ❑ Use all the exam time allotted.
- ❑ Check over your exam to be sure that you have answered all questions, that your calculations are correct and that your answers line up with the answer sheet/ Scantron.
- ❑ Change answers only if you are sure of the change.
- ❑ If you are so nervous that you blank out on exams or have intense physical symptoms see Managing Exam Anxiety (page 80). Meeting with a counsellor at Student Counselling can help you to identify and resolve sources of exam anxiety.

# Strategies for Exam Writing

## Use the First Five Minutes Wisely

- ❑ Skim read the entire exam.
- ❑ Note the mark allocation for each section/question.
- ❑ Ensure that you have the entire exam (all pages).
- ❑ Develop a mark per minute ratio (e.g. 1.5 hour exam – 90 marks = 1 mark per minute) and occasionally check the clock to see that you are on track with time. However don't check the time too frequently and don't check if it causes you to panic.
- ❑ Write out any formulas and acronyms before you start.
- ❑ Use a system to quickly categorize questions into those you know well, those you know something about and those you know little about.
- ❑ Start with the questions you know well.

## General Exam Writing Tips

- ❑ Read directions carefully.
- ❑ Read questions carefully (re-read if necessary).
- ❑ Be clear on what the question is asking and make sure you are answering the actual question. Don't read more into the question than is there.
- ❑ Underline key terms and information.
- ❑ Start with some "easy" questions.
- ❑ Write legibly.
- ❑ Ration your time according to mark allocation – don't spend too much time on low mark questions.
- ❑ Work at a reasonable pace, even if you don't complete the exam.
- ❑ Use all the exam time allotted (it's not a contest to see who can leave the exam room first).
- ❑ Check over your exam.
- ❑ Ignore what others are doing (especially "early leavers").
- ❑ Don't compare yourself to others.
- ❑ Don't discuss the exam with others (before or after the exam).

## Before You Hand in Your Exam

- ❑ Review your answers.
- ❑ Check your calculations and units.
- ❑ Change answers only if you are sure of the change.
- ❑ Ensure your name is on all pages.
- ❑ Check that you have answered all questions.
- ❑ Check that your answers line up on the answer sheet.

# Hints for Answering Specific Types of Questions

## Multiple Choice

*Method 1: (best if you have difficulty with multiple choice):*

- Cover the answers.
- Read the question carefully.
- Underline key words.
- Restate the question in your own words.
- Answer the question in your head and **then** look for the “best” answer.
- Read all answers before choosing.

*Method 2:*

- Use the process of elimination, treating each answer as a true/false.
- Choose the best answer.

## Problem/Formula

- Identify the type of problem.
- Think of the process and outline the steps.
- Underline the key facts/information.
- Plug facts into the process, and cross the facts out of the question as you use them.
- Show all steps and calculations.
- Ensure that your answer is in the correct units.

## Matching

- Do easy questions first.
- Cross out answers as used.
- Use the process of elimination.

## True/False

- Make sure that all parts of the answer are true before marking it “True”.
- Beware of absolute words (e.g. all, always, never...).

## Open Book

- Be very familiar with materials; use flags to divide topics and mark important information. Cross reference material where necessary
- Practice questions while using the materials.
- Avoid being lulled into a false sense of security because you have your notes available. You still need to study the material thoroughly and commit some information to memory.

## Essay

- Read essay topics carefully. Be sure that you understand the question, and that you are answering that question in your essay.
- Create an outline prior to writing.
- Ensure that you understand essay format. Ideas need to be organized clearly.
- Proof read before you hand in the exam.

## Managing Exam Stress

Stress before exams is a normal state. It motivates you to stay alert and to do your best. Exam anxiety, however, is the state of being so nervous during a test that you cannot perform to the best of your ability, and you lose marks even though you know you have studied and are well prepared.

### Why do I get so anxious about exams?

Recognizing why you are anxious may help you to modify your anxiety to an appropriate level. There are many reasons underlying exam anxiety. Here are some of the common reasons:

- Having unrealistic expectations. If you are aiming for a mark in the 90s when a mark in the 70s may be more realistic, you are bound to be anxious.
- Feeling pressure to 'please' someone else (parents, partner, employer) or thinking others will think less of you if you do not do well).
- Viewing yourself as a poor student because you did poorly in the past or because you have been out of school for a long period
- Blowing the exam out of proportion instead of seeing it as an opportunity to demonstrate what you know and get feedback on which material requires better understanding.

### Techniques for managing exam anxiety:

In order to manage exam anxiety effectively you need to manage both mental and physical aspects. Experiment with the techniques and find the ones that work best to calm you quickly. Make sure to practice them while you are studying and while you are practicing mock exams. These techniques take very little time (less than a minute) so can easily be incorporated into your exam writing time.

#### 1) Managing physical aspects

- **Deep Breathing** – breathe in slowly and deeply through your nose and feel your stomach (not your chest) extend. Hold for a few seconds. Pull in your stomach, forcing the air out slowly while thinking "relax" or "calm". Repeat several times. If you become good at this technique it is one of the easiest to use during exams.
- **Muscle Relaxation** - Tense and release each muscle group in your body individually, starting at your feet and working up to your

- head. A quicker version of this is to tense all of your muscles as hard as you can, and then release. Repeat at least 3 times.
- **Body Scan** – become aware of where you carry your tension. Focus on those muscles and relax the muscles, either by drawing your breath into the area and then slowly releasing your breath along with the tension, or by visualizing the muscles surrounded by warm relaxing light.
  - **Shrug Off Tension** – Lift your shoulders upward while you inhale. Exhale strongly while dropping your shoulders. Repeat several times.

## 2) Managing mental aspects

- **Thought Stopping**– when you find yourself worrying, thinking negatively or thinking thoughts that have led to anxiety in the past, yell “stop” in your head and think neutral or positive thoughts. Over time you can train yourself to think more positively.
- **Visualization** - imagine a calming place (e.g. beach, forest). Imagine what you see, hear, smell and feel.
- **Positive Self Talk** - repeat positive messages such as “I can stay calm and relaxed”, “I know my material, I am well prepared”.
- **Daydream** – Flood your mind with positive thoughts so there is no room for anxious thoughts. For example, imagine the specific details of doing something you like to do.
- **Humor** – It is difficult for humor and stress to exist together. Think of the funniest thing that happened to you in the last month, or of a funny joke or story you’ve heard recently.
- **Object Focus** – focusing on the details of a specific object will help to take your mind off of the exam and reduce stress. You can also use an object to remind you of a calming experience.
- **Distraction** - distraction techniques such as saying the alphabet backwards or thinking of the birth dates of your siblings can help to bring back your focus if you are experiencing anxiety.
- **Describe It and Be With It** – Describe your anxiety in detail. Give it characteristics such as colour, texture, size, shape and weight. Then completely experience the sensation without resisting it.

## **Managing anxiety during the semester:**

- ❑ Exercise regularly, every day if possible; continue exercising during exam periods even if you do less exercise. You don't need to have a rigorous, time-consuming exercise program. Any exercise that increases your heart rate for twenty minutes (walking quickly, biking, dancing) will reduce stress.
- ❑ Get sufficient sleep.
- ❑ Get into a regular routine – regular sleep and waking times, regular meal times and regular times for exercise and study help you to remain calm and give you a feeling of being in control of your life.
- ❑ Do something that relaxes you every day – listening to music, reading fiction, yoga, meditation, a hot bath ...
- ❑ Have fun every day – do enjoyable activities and try to have at least one good laugh every day.
- ❑ Take care of external sources of stress such as paying bills, preparing meals ahead, and letting people know that you won't be available during exam times.
- ❑ Consider which people in your social network make you feel calm and which people make you feel stressed. Spend the bulk of your social time around calm people, especially when you know a stressful life situation (e.g. exam time) is coming up.
- ❑ Practice using the anxiety-reduction techniques listed on page 80/81.
- ❑ Learn to laugh at yourself.

## **Managing anxiety while studying:**

- ❑ Allow yourself plenty of time to accomplish all the things you have to do before the test. Develop a study schedule broken down into manageable steps. Take one step at a time in order not to overwhelm yourself.
- ❑ Set realistic goals for each study session.
- ❑ Build up confidence by reviewing the material frequently. To an extent, over learning is the best insurance against going blank on an exam.
- ❑ Perfectionists are prone to exam anxiety. Strive for excellence but not for perfection. Set limits on the amount of time you are going to study and on the amount of detail you can learn.
- ❑ Spread review over several days rather than cramming.

- ❑ Study for a maximum of 50 minutes and then take a 5 to 10 minute break. If possible alternate the subjects you study each 50-minute session.
- ❑ Make sure you are “really” studying. Many students prepare for a test by reading their notes or textbooks. As you read you may feel that you know (understand) what the author is saying. Understanding what you are reading at the moment does NOT mean that you know it well enough to remember it for a test when the book isn't there to help you. By using reading and rereading as your only study technique you may find yourself going "blank" when trying to answer a test item. Study actively by thinking of potential exam questions and the correct answers, and by making sure you can recite or jot down key concepts with your textbook closed.
- ❑ Test yourself frequently. Use old quizzes, assignments or chapter-end questions or tests that you make up from your study material. Doing frequent mock tests increases confidence and lowers exam anxiety.
- ❑ Devise a system for practicing rapid problem solving as part of your review for the test. Usually homework problems are solved at a leisurely rate while tests require rapid problem solving. Being experienced at working under time pressure can help alleviate exam anxiety.

### **Managing anxiety prior to the test:**

- ❑ Many students find it helpful to go for a brisk 5 to 10 minute walk right before the test. This helps with deep breathing and relaxation.
- ❑ If you have problems with anxiety, do NOT drink caffeine (e.g. coffee, some teas, dark colas). Caffeine mimics and escalates the symptoms of anxiety.
- ❑ Arrive early so you can sit where you are most comfortable, get organized, and avoid people who are anxious and might cause you to doubt your knowledge. Don't arrive so early that you have a lot of time to let your stress build up.
- ❑ Do not let yourself get into a negative mindset such as, “I always panic on exams” or “I blanked out last time so I will blank out again”. Instead think thoughts such as “I know my material” or “I can stay calm and relaxed”.

### **Managing anxiety during the test:**

- When you receive the test look it over, read the directions carefully and then organize your time efficiently. Don't rush through the test. Work at a comfortable but efficient pace and don't worry about how far along classmates are.
- Look over the questions to familiarize yourself with the test. Underline key words or phrases in the test directions. Many students with exam anxiety make errors because they don't read the question thoroughly.
- At all times try to focus on the process of answering the question rather than on the end result.
- If you go blank, skip the question and go on. Find some questions you can answer.
- Regard a lapse of memory as perfectly normal; do not let it throw you into a panic. If you block on answering one question, leave it for awhile and return to it later.
- Don't panic when you don't know an answer. Eliminate options that you know are incorrect and then make an educated guess. Come back to the question later – you may get hints from other questions or remember the answer when you are not struggling to find it.
- Use the anxiety-reducing techniques that you have practiced.
- Keep the exam in perspective. An exam is a snapshot of what you know at a particular time; it is not an evaluation of your self worth. Usually the consequences of doing poorly on one exam will not mean that you will fail the course.
- Sipping water, chewing gum or changing positions can relieve tension.
- If you find yourself blanking on everything take some deep breaths, focusing just on your breathing, and then start to jot down some things you know about the course. This should trigger other information. Keep your breathing slow and deep.
- Don't panic when other students start handing in their papers. There is no reward for being the first person done.
- Don't rush through the exam – it is better to do your best on 80% of the exam than to complete the exam and make a lot of errors.

**Evaluate your anti-anxiety strategies after the exam. Make sure to keep incorporating those that worked. See a counsellor at NAIT Student Counselling to get further advice on managing anxiety.**

# Resources

*"Some succeed because they are destined to, but most succeed because they are determined to."*

~ author unknown



**NAIT**

STRATEGIES FOR SUCCESS

COUNSELLING SERVICES

Techniques to Maximize Learning Potential

## Who You Gonna Call? NAIT Student Services

**Student Counselling** - professional counsellors are available to assist you with academic or personal concerns. All services are free and confidential.

**Location:** Room W111-PB, HP Centre, Main Campus

**Hours:** 8:00 a.m. to 4:30 p.m. Monday to Friday

**To book an appointment:** phone 780-378-6133 or book in person at Room W111-PB, HP Centre.

**Website:** [www.nait.ca/counselling](http://www.nait.ca/counselling)

**Services to Students with Disabilities (SSD)** – if you have a documented disability (permanent or temporary) and would like to learn more about services, drop in to see an advisor. If you do not have documentation, an advisor can assist you in obtaining a learning assessment.

**Location:** Room W111-PB, HP Centre, Main Campus

**Drop-In Hours:** 8:00 a.m. to 4:15 p.m. Monday to Thursday

**To book an appointment:** phone 780-378-6133 or book in person at Room W111-PB, HP Centre.

**Website:** [www.nait.ca/ssd](http://www.nait.ca/ssd)

**Tutorial Centre** - professional tutors can assist you with math, physics or chemistry. No charge.

**Locations:** Room A133, Main Campus, Room Z153A, Souch Campus, and Room P150/P152, Patricia Campus.

**Hours:** 8:30 a.m.- 1:15 p.m. & 2:30 p.m.- 4:30 p.m. Monday to Friday at Main campus. **Drop-in basis.**

**Peer Tutors** – you can hire an individual peer tutor for approximately \$15 per hour. If you have completed a course and done well (75% or better) you may be interested in becoming a peer tutor.

**Location:** Room A172B, Main Campus

**Hours:** 8:00 a.m. to 4:30 p.m. Monday to Friday

**Student Awards** – you may be eligible for a bursary, scholarship or award.

**Location:** Room 0101

**Hours:** 8:00 a.m. to 4:30 p.m. Monday to Friday

**Website:** [www.nait.ca/scholarships](http://www.nait.ca/scholarships)

# Books and Websites

## Books

Becoming a Master Student by David Ellis (Houghton Mifflin, 2006)

Learning How to Study and SOAR to Success by Kenneth A. Kiewra (Pearson Prentice Hall, 2005)

Learning to Learn: Making the Transition from Student to Life-Long Learner by Kenneth A. Kiewra & Nelson F. Dubois (Allyn & Bacon, 1998)

Study Smarter, Not Harder by Kenneth Paul (Self-Counsel Press, 2009)

## Websites

### **NAIT Study Skills**

[www.nait.ca/studyskills](http://www.nait.ca/studyskills)

### **Study Skills Package - University of Waterloo**

[www.adm.uwaterloo.ca/infocs/study/](http://www.adm.uwaterloo.ca/infocs/study/)

### **Study Skills from the Augustine Club**

[www.columbia.edu/cu/augustine/study/](http://www.columbia.edu/cu/augustine/study/)

### **Dartmouth Academic Skills Centre**

[www.dartmouth.edu/%7Eacskills/success/index.html](http://www.dartmouth.edu/%7Eacskills/success/index.html)

### **Virginia Tech Study Skills**

[www.reachoutmichigan.org/learn/stdyhelp.html](http://www.reachoutmichigan.org/learn/stdyhelp.html)

### **Success in Mathematics from St. Louis University**

<http://mathcs.slu.edu/undergrad-math/success-in-mathematics>

### **Flashcard Exchange**

[www.flashcardexchange.com](http://www.flashcardexchange.com)

### **Inspiration Software**

[www.strategictransitions.com](http://www.strategictransitions.com)

# WEEKLY PLANNING SCHEDULE\*

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6:15 am							
7:15 am							
8:15 am							
9:15 am							
10:15 am							
11:15 am							
12:15 pm							
1:15 pm							
2:15 pm							
3:15 pm							
4:15 pm							
5:15 pm							
6:15 pm							
7:15 pm							
8:15 pm							
9:15 pm							
10:15 pm							
11:15 pm							

\* copies available at Student Counselling, Room W111-PB, HP Centre