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About the College

There are many paths to higher education at Middlesex Community College. Our programs and scheduling are geared to the realities of people's lives, to their educational needs and preferences, and for students with jobs or family responsibilities. You can choose an academic associate degree or certificate program, or one of our short-term, highly focused programs of intensive instruction in selected career fields, including some accelerated options with classes scheduled at a variety of convenient times--Saturdays, Sundays, mid-afternoons, and evenings.

**Bedford Campus**

In Bedford, our campus spreads over 200 acres with eleven buildings-classrooms, laboratories, offices, library and a student center. Located off Springs Road, near the Billerica border, close to Routes 128 and 3.

**Lowell Campus**

Our Lowell Campus is in the heart of downtown. The City Campus building is at Kearney Square, across the street from the Federal Building, which houses MCC’s Library and classrooms. The Health, Science & Technology Center (that includes our open-to-the-public dental clinic) is on Middle Street.
# Learning Preferences Inventory

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>I like to listen and discuss work with a partner.</td>
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<tr>
<td>2.</td>
<td>I learn by hearing my own voice on tape.</td>
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<tr>
<td>3.</td>
<td>I prefer to learn something new by reading about it.</td>
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<tr>
<td>4.</td>
<td>I often write down the directions someone has given me so that I don’t forget them.</td>
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<tr>
<td>5.</td>
<td>I enjoy physical sports or exercise.</td>
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<tr>
<td>6.</td>
<td>I learn best when I can see new information in picture form.</td>
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<tr>
<td>7.</td>
<td>I am able to visualize easily.</td>
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<tr>
<td>8.</td>
<td>I learn best when someone talks or explains something to me.</td>
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<tr>
<td>9.</td>
<td>I usually write things down so that I can look back at them later.</td>
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<tr>
<td>10.</td>
<td>If someone says a long word, I can count the syllables that I hear.</td>
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<tr>
<td>11.</td>
<td>I have a good memory for old songs or music.</td>
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<tr>
<td>12.</td>
<td>I like to discuss in small groups.</td>
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<tr>
<td>13.</td>
<td>I often remember the size, shape, and color of objects.</td>
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<tr>
<td>14.</td>
<td>I often repeat out loud the directions someone has given me.</td>
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<tr>
<td>15.</td>
<td>I enjoy working with my hands.</td>
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<tr>
<td>16.</td>
<td>I can remember the faces of actors, settings, and other visual details of a movie I saw in the past.</td>
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<tr>
<td>17.</td>
<td>I often use my hands and body movement when I’m explaining something.</td>
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<tr>
<td>18.</td>
<td>I prefer to practice redrawing diagrams on a chalkboard rather than on paper.</td>
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<tr>
<td>19.</td>
<td>I seem to learn better if I get up and move around while I study.</td>
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<tr>
<td>20.</td>
<td>If I wanted to assemble a bike, I would need pictures or diagrams to help with each step.</td>
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<tr>
<td>21.</td>
<td>I remember objects better when I have touched them or worked with them.</td>
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<tr>
<td>22.</td>
<td>I learn best by watching someone else first.</td>
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<tr>
<td>23.</td>
<td>I tap my fingers or my hands a lot while I am seated.</td>
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<tr>
<td>24.</td>
<td>I speak a foreign language.</td>
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<tr>
<td>25.</td>
<td>I enjoy building things.</td>
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<tr>
<td>26.</td>
<td>I can follow the plot of a story on the radio.</td>
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<tr>
<td>27.</td>
<td>I enjoy repairing things at home.</td>
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<tr>
<td>28.</td>
<td>I can understand a lecture when I hear it on tape.</td>
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</table>
29. I am good at using machines or tools.
30. I find sitting still for very long difficult.
31. I enjoy acting or doing pantomimes (gestures without speech).
32. I can easily see pattern in designs.
33. I need frequent breaks to move around.
34. I like to recite or write poetry.
35. I can usually understand people with different accents.
36. I can hear many different pitches or melodies in music.
37. I like to dance and create new movements or steps.
38. I enjoy activities that require physical coordination.
39. I follow written directions better than oral ones.
40. I can easily recognize differences between similar sounds.
41. I like to create or use jingles/rhymes to learn things.
42. I wish more classes had hands-on experiences.
43. I can quickly tell if two geometric shapes are identical.
44. The things I remember best are the things I have seen in print or pictures.
45. I follow oral directions better than written ones.
46. I could learn the names of fifteen medical instruments much easier if I could touch and examine them.
47. I need to say things aloud to remember them.
48. I can look at a shape and copy it correctly on paper.
49. I can usually read a map without difficulty.
50. I can “hear” a person’s exact words and tone of voice days after he or she has spoken to me.
51. I remember directions best when someone gives me landmarks, such as specific buildings and trees.
52. I have a good eye for colors and color combinations.
53. I like to paint, draw, or make sculptures.
54. When I think back to something I once did, I can clearly picture the experience.
Scoring Your Profile

1. Ignore the NO answers. Work only with the questions that have a YES answer.
2. For every YES answer, look at the number of the question. Find the number in the following chart and circle that number.
3. When you finish, not all the numbers in the following boxes will be circles. Your answers will very likely not match anyone else’s in class.
4. Count the number of circles for the Visual box and write the total on the line. Do the same for the Auditory box and the Kinesthetic box.

<table>
<thead>
<tr>
<th>Visual</th>
<th>Auditory</th>
<th>Kinesthetic</th>
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<tbody>
<tr>
<td>3, 4, 6, 7, 9,</td>
<td>1, 2, 8, 10, 11,</td>
<td>5, 15, 17, 18, 19,</td>
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<tr>
<td>13, 16, 20, 22, 32</td>
<td>12, 14, 24, 26, 28,</td>
<td>21, 23, 25, 27, 29,</td>
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<tr>
<td>39, 43, 44, 48, 49,</td>
<td>34, 35, 36, 40, 41,</td>
<td>30, 31, 33, 37, 38,</td>
</tr>
<tr>
<td>51, 52, 54</td>
<td>45, 47, 50</td>
<td>42, 46, 53</td>
</tr>
</tbody>
</table>

Total: _________  Total: _________  Total: _________

Analyzing Your Scores

1. The highest score indicates your preference. The lowest score indicates your weakest modality.
2. If your two highest scores are the same or very close, both of these modalities may be your preference.
3. If all three of your scores are identical, you have truly integrated all three modalities and can work equally well in any of the modalities.
4. Scores that are 10 or higher indicate you use the modality frequently.
5. Scores lower than 10 indicate the modality is not highly used. Most often, it is because you have had limited experience learning how to use the modality effectively as you learn. In this case, learning new strategies can strengthen your use of the modality.
The following chart shows common characteristics of each of the three types of learners. A person does not necessarily possess abilities or strengths in all of the characteristics but may instead “specialize” in some of the characteristics. Some of this may be due to a person’s educational background or background of experiences. For example, an auditory learner may be strong in the area of language skills but may not have had the experience to develop skills with a foreign language or music.

| VISUAL | Learn best by seeing information  
|        | Can easily recall printed information in the form of numbers, words, phrases, or sentences  
|        | Can easily understand and recall information presented in pictures, charts, or diagrams  
|        | Have strong visualization skills and can look up (often up to the left) and “see” information  
|        | Can make “movies in their minds” of information they are reading  
|        | Have strong visual-spatial skills that involve sizes, shapes, textures, angles and dimensions  
|        | Pay close attention and learn to interpret body language (facial expressions, eyes, stance)  
|        | Have keen awareness of aesthetics, the beauty of the physical environment, and visual media  
| AUDITORY | Learn best by hearing information  
|         | Can accurately remember details of information heard in conversations or lectures  
|         | Have strong language skills that include well-developed vocabularies and appreciation of words  
|         | Have strong oral communication skills that enable them to carry on conversations and be articulate  
|         | Have “finely tuned ears” and may find learning a foreign language relatively easy  
|         | Hear tones, rhythms, and notes of music and often have exceptional musical talents  
| KINESTHETIC | Learn best by using their hands (“Hands-on” learning) or by full body movement  
|           | Learn best by doing  
|           | Learn well in activities that involve performing (athletes, actors, dancers)  
|           | Work well with their hands in areas such as repair work, sculpting, art, or working with tools  
|           | Are well-coordinated with a strong sense of timing and body movements  
|           | Often wiggle, tap their feet, or move their legs when they sit  
|           | Often were labeled as “hyperactive” |
Now that you are aware of your own learning preferences, you can begin to select learning strategies that work with your strengths: In the following charts you will find a wide array of learning strategies for you to try; the majority of your strategies will likely come from your area of strength. However, a valuable goal to set for yourself is to strive to integrate all of the modalities into your learning process; therefore, try using several of the strategies for your weaker modalities as well. As you will also notice, some learning strategies will incorporate more than one modality. Multisensory learning strategies have the capability of strengthening your memory even more.

**Learning Strategies That Utilize Modalities**

<table>
<thead>
<tr>
<th>VISUAL</th>
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</table>
| - Create stronger visual memories of printed materials by highlighting important ideas with different colors of highlighters or by highlighting specific letters in spelling words or formulas or equations in math.  
- Take time to visualize pictures, charts, graphs, or printed information and take time to practice recalling visual memories when you study.  
- Create “movies in your mind” of information that you read; use your visual memory as a television screen with the information moving across the screen.  
- Use visual study tools such as visual mappings, hierarchies, comparison charts, and time lines to represent information you are studying. Expand chapter mappings or create your own chapter mappings to review main ideas and important details in chapters. Add colors and/or shapes or pictures.  
- Enhance your notes, flash cards, or any other study tools by adding colors and pictures (sketches, cartoons, stick figures).  
- Color-code study tools. (Different colors imprint into memory more easily for some students.) Colors can be used to accentuate specific parts of textbooks, notes, or any written materials you work with or you have created.  
- Copy information in your own handwriting if seeing information on paper in your own hand-writing helps you learn and remember more easily. Practice visualizing what you write.  
- Use your keen observational skills to observe people and pick up on clues they may give about important information, emotions, or their general state of being.  
- Always be prepared with a pen and notepaper (or a small notepad) to write down information or directions. (Written information is easier to recall more accurately.) |
Learning Strategies That Utilize Modalities (cont.)

**AUDITORY**

- Talk out loud to explain new information, express your ideas, and practice information you are studying, or paraphrase another speaker.
- Recite frequently while you study. Reciting involves speaking out loud in complete sentences and in your own words.
- Read out loud. (Reading out loud often increases a person’s comprehension or clarifies confusing information that is read silently.)
- Work with tutors, with a “study buddy,” or in a study group to have ample opportunity to ask questions, articulate answers, and express your understanding of information orally.
- For lectures, take your own notes, but back your notes up with a tape-recorded version of the lecture. (Request approval first from the instructor.) Review only the parts of the lecture that are unclear or confusing.
- When you practice reciting your notes, flash cards, study tools or information from a textbook, turn on a tape recorder. Tapes made in your own voice often become valuable review tools.
- Verbally explain information or processes to someone or to an imaginary person. Explaining verbally provides immediate feedback of your level of understanding.
- Make review tapes to review the most important information (rules, definitions, formulas, lists of information, dates, or other factual information) prior to a test.
- Create rhymes, jingles, or songs to help you remember specific facts.
- Read confusing information using exaggerated expression. The natural rhythm and patters of your voice often group information in such a way that it becomes easier to understand.
- Use computerized technology (electronic spell checkers, calculators with a “voice,” speech synthesizers on computers) to help with the learning process. Access CD-ROM programs and multimedia software that provide auditory and visual stimuli for learning.

**KINESTHETIC**

- Handle objects, tools, or machinery that you are trying to learn. For example, handle the rocks you study in geology, repeat applications several times on a computer, or hold and use tools or parts of machinery that are discussed in class or in your textbook.
- Create manipulatives (study tools that you can move around with your hands). These may include flash cards or cards that can be shuffled, spread out, sorted, or stacked as a way to categorize information.
- Cut charts or diagrams apart; reassemble them in their correct order.
- Use exaggerated movements and hand expressions, drama, dance, pantomime, or role playing to assist the development of long-term memory. Muscles also hold memory, so involving movement in the learning process creates muscle memory.
- Type or use a word processor. Using a keyboard involves fine motor skills and muscle memory; it may be easier to remember information that you typed or entered into a computer.
- Talk and walk as you recite or practice information. Pacing or walking with study materials in hands helps some people process information more naturally.
- Work at a chalkboard, with a flip chart, or on large poster paper to create study tools. List, draw, practice, or write information while you stand up and work on a larger surface.
- Learn by doing. Use every opportunity possible to move as you study. For example, if you are studying perimeters in math, tape off an area of a room and walk the perimeter.
Keys to College Success

Researchers have identified certain things students can do to ensure success. Students are often unaware of what these “persistence factors” – or keys to success – are and how much they really matter. Here are twenty basic things you can do to thrive in college.

1. Find and get to know one individual on campus who cares about your survival.
2. Understand why you are in college.
3. Try to have realistic expectations.
4. Find a great academic advisor or counselor.
5. Visit the career center early in your first term.
6. Learn about the resources your campus offers and where they are located.
7. Know how to find information in your campus library, on the Internet, and through other sources.
8. Set up a daily schedule and stick to it.
9. If you are attending classes full time, try not to work more than 20 hours a week.
10. Choose instructors who involve you in the learning process.
11. Show up for class.
12. See your instructors outside class.
13. Make at least one or two close friends among peers.
14. Join at least one study group.
15. Get involved in campus activities.
16. Improve your writing and speaking skills.
17. Assess and improve your study habits.
18. Develop critical thinking skills.
19. Polish your computer skills.
20. Take your health seriously.
How to Impress Your Instructor

- **Be early.** Arrive at class and find a seat from which you can see and be seen. Get your equipment out (pens, pencils, notebook). Quickly review your notes from the last session, and be ready to ask questions if you have any.

- **Greetings.** Smile at the instructor (it makes him/her feel acknowledged) and at your fellow students (you may need their brains).

- **Dress and Demeanor.** Research has demonstrated that neat attire and attitude go a long way.

- **Prepare.** Read the material **before** the lecture. You will find you will need to take fewer notes and be able to listen more carefully. If a tape recording would help, ask permission. Continue to take notes and remember to listen to the recording as soon as possible after class; listen with your notes at hand. If there is work to be handed in, have it ready. Word processing allows you to have fewer errors. Name, class, assignment number or name, and date go in the upper right-hand corner, with multiple pages numbered and stapled, unless instructed otherwise.

- **Read, Read and Read.** Bookstores and libraries are really lovely places. Find “quick guides,” and go through them within the first two weeks of a class. They will give you the context of the material (it all can’t be taught at once). Read purposefully. Try and relate the material to both a personal and global context. Each field has its own dictionary and encyclopedia; find them and refer to them throughout the course. Read a daily and weekly newspaper and magazine. Ask the instructor for the names of other texts, journals, and reference books.

- **Write, Write and Write.** Rewrite your notes so you know what they mean. If there are gaps, ask someone who knows. Make flash cards and create mnemonic devices for terms and concepts. Draw relationship charts. Keep a journal.

- **Study with Someone Who Cares.** Find people in the class who are really interested in learning. Work with them before, after, and between classes.

- **Coffee, Etc.** Many of us need a cup of coffee. Bring a covered mug that is less likely to spill. Be careful with your soda, and always remember to recycle. Eating, cleaning out your purse, doing your nails, and doing homework during class are real turnoffs.

- **Absences.** Avoid them at all cost. If you have been absent, go to the instructor’s office to explain; do not make your explanation in or before class. If there is work or material you missed, try to get it from a classmate. If you cannot, explain that to the instructor.

- **Appear Teachable.** It is amazing how much nicer a teacher can be when you act appropriately in the classroom. This does not mean asking any and all questions to get attention. In fact, if you formulate a question and write it down, sometimes it will answer itself, or the teacher will get to it. If not, you can ask it at an appropriate time. You can and should write out the answer you receive.
Personal Checklist for Success

Below is a list of successful study strategies. To be a successful student, you must find study strategies that suit your learning style. Review this checklist. Check the study strategies that you currently use. Choose three or four new strategies that you intend to work on over the next few weeks.

___________ Keep notes separated by course, dated, and arranged in chronological order.

___________ File the syllabus for each course at the start of that notebook AND refer to it at least twice weekly.

___________ Preview textbook chapters and other reading assignments.

___________ Practice SQ4R.

___________ Develop study guides for each chapter.

Keep vocabulary log or vocabulary flashcards for the new terminology in each chapter.

Mark up all reading assignments, selecting main points and supporting details, looking up unfamiliar terms and writing marginal notes.

___________ Take book notes.

___________ Outline or map out textbook chapters.

___________ Summarize textbook chapters and other reading assignments.

___________ Tape record lectures and play back to fill in class notes.

___________ Borrow the notes of a friend for comparison.

Attend weekly tutoring sessions at one of the tutoring centers or labs for support.

___________ Before tests, compile a list of questions and answers for each chapter covered.

___________ Study for tests with a partner or in a small group.

___________ Practice for tests with a tape recorder.

___________ Inquire about test content during faculty office hours.
LEARNING FROM LECTURES

How to Listen Effectively
Listening is one of the most important yet least recognized skills necessary for learning from lectures. Most students don’t naturally listen in the way the lecture situation requires. To listen effectively, you must “engage” the speaker – that is, create an internal conversation between you and the instructor as he/she is lecturing. This includes actively anticipating and questioning what the lecturer says and sorting or categorizing the information being presented. Engaging the speaker is easier if you sit where you can see and hear clearly. If you read over previous notes briefly before class and complete any assigned readings, you’ll be well prepared to be an effective listener.

Adapt to Instructors Style
Learning from lectures also means that you must adapt to the style of the instructor. He/she decides what topics the lecture will cover, as well as how quickly information is presented. Adapting to a fast or monotonous pace is a challenge for even the most experienced student. Getting information and advice on note taking strategies can be helpful if your skills are challenged by your instructor’s particular learning style.

Deciding What to Write Down
It is common for first year students who are used to the direction and structure of high school classes to have difficulties in deciding what to write down in a lecture. At college, you are responsible for piecing together information about your instructor’s objectives for the course, how the lectures and textbook fit together, what you are expected to do with the lecture material, and how you will be evaluated. It’s important to be aware of this kind of information because these factors and others form the basis for the decisions you make about how much to write down in lectures, the amount of detail in which you’ll study your texts, and what course material to concentrate on when preparing for exams. The best source to find this information is your instructor. As an expert in the field, he/she decides what topics to present, how to organize the course, and how to evaluate your knowledge of the course content and any skills you are expected to acquire. Some instructors may clearly indicate important content. Sometimes information on what’s important is implicit in the way the lecture is organized. Watch for verbal clues like “First…second…” which denote the series of important points, or more explicit clues like, “note that…” A general rule of thumb is that if the instructor takes the trouble to write something on the board, it is important. Non-verbal information, such as the instructor’s facial expression or tone of voice, can indicate that a topic is important. The amount of time the instructor spends on a topic may be another indication of its importance. The course outline, which is often distributed in the first class, is a valuable resource that is all too often skimmed and filed for the duration of the course. The
course outline can indicate which topics will be emphasized and what the organizational structure of the course will be. Keep your course outlines in a safe place and refer to them often.

**Complete Assigned Readings**

Give priority to completing assigned readings before class so that you won’t be struggling to copy something that is already in your text. Doing the readings beforehand can also help you to listen more actively in class, predict the topics the lecture may cover and can give an advanced indication of any difficulties which you can then clarify in the lecture.

**Use a Partner**

You can try working with a classmate to develop your note-taking skills. After class compare notes and analyze the differences. Discuss why you recorded something and your partner didn’t, and vice versa. After several weeks, if you are still unsure whether you’re getting down the important points, you can ask the instructor to give you some feedback on your notes from one lecture.

DO…date and number pages, write legibly, use loose-leaf paper, use only one side of the paper, leave space between topics, edit notes each day.

DON’T…depend on someone else’s notes, habitually tape lectures, cause or tolerate distractions, assume for any reason that going to class is unnecessary.
LISTENING & NOTE TAKING

1. Go to class – there is no substitute for the real thing.
2. Have assigned readings done before each lecture.
3. Listen actively by anticipating what the lecturer will say.
4. Screen and evaluate information by comparing your text and your own knowledge.
5. Concentrate.
6. Take notes. Note topics and subtopics. Use brief point form, putting things in your own words.
7. Use the margin or draw a column to note key terms or questions you have.
8. Use diagrams where possible, especially to illustrate relationships.
9. Review your notes before each class, and plan a weekly review which integrates lecture and text notes.
10. Ask your professor to clarify points you don’t understand.
## Cornell Method of Note Taking

**DATE:**_____________  **TOPIC:** __________________________

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<th>Key Words/Questions?</th>
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**Summary**

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Strategies for Success: A Resource for Students and Teachers

Jo Mucci, Director of First-Year Experience & Student Success at Middlesex Community College
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<th>Synthesis/Reflection</th>
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</tr>
<tr>
<td>2 Covalent</td>
<td>Sodium Ion</td>
</tr>
<tr>
<td>3 Hydrogen</td>
<td>NA diagram</td>
</tr>
</tbody>
</table>

- Sodium gives up one electron (loses) 

**Ex.** 
- NaCl
- Sea Salt KCl
- Potassium Chloride

**Ex.** Salt Calcium CaCl₂ Chloride

### Notes
- Talk to teacher if need more info.
- 6:00pm Dental Appointment

- Positional Ch. Ion: more protons
- Neg. Charged gain an (e)

- **HuH?**
- **Why??**

- Check this!
### Class Notes

**DATE:** 1/22/2013  
**TOPIC:** Types of Bonds

<table>
<thead>
<tr>
<th>Key Words/Questions?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Def:</strong> Bonds are forces that hold atoms together.</td>
<td></td>
</tr>
<tr>
<td><strong>What are bonds?</strong></td>
<td></td>
</tr>
<tr>
<td>1. Ionic Bonds – atoms gain or lose electrons. Electrons are transferred from one atom to another.</td>
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</tr>
<tr>
<td><strong>Ex.</strong> Sodium Chloride - NaCl (salt)</td>
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</tr>
<tr>
<td>Potassium Chloride - KCl (sea salt)</td>
<td></td>
</tr>
<tr>
<td>Calcium Chloride - CaCl (road salt)</td>
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</tr>
<tr>
<td><strong>What are the 3 types of bonds?</strong></td>
<td></td>
</tr>
<tr>
<td>2. Covalent Bonds – atoms share electrons</td>
<td></td>
</tr>
<tr>
<td><strong>Ex.</strong> Methane and water</td>
<td></td>
</tr>
<tr>
<td>Give an example for each one</td>
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</tr>
<tr>
<td>3. Hydrogen Bonds – partially positive hydrogen atom attracted to a partially negative atom.</td>
<td></td>
</tr>
<tr>
<td><strong>Ex.</strong> Hydrogen bonds hold water molecules together.</td>
<td></td>
</tr>
</tbody>
</table>

**Summary:** Bonds hold atoms together. There are three types (Ionic, Covalent and Hydrogen).
TEXTBOOK
READING

1. Do required reading on a regular basis. Keep a weekly schedule.
2. Preview material to get an overview. See how the chapter is organized.
3. Consider the author’s writing style and potential biases.
4. Use different reading speeds. Pay attention to your attention.
5. Think of questions to answer as you read through the material.
6. Reflect on the material as you read. Note important points. Integrate with lecture notes or in text margins.
7. Summarize what you have read. Note important points. Integrate with lecture notes or in text margins.
8. Take breaks. Set targets to work towards and take breaks.
9. Find a quiet, comfortable place to read. Your bed may not be the best place!
10. Review your readings on a regular basis.
11. Review course material weekly to keep material fresh in your memory.
The SQ4R Study Method

The following study method is useful for reading assignments. It can help you improve your understanding and memory of important information. The SQ4R method challenges you to become an active reader. Explained below, the SQ4R Study Method stands for:

S: Survey – This is the first step, one that can help save time. Begin by scanning and previewing the chapter before reading it. Consider supporting features such as the title, boldface headings, illustrations, graphs, and margin notes and summary. Ask yourself: What is the chapter about? What major topics are included?

Q: Question – Turn headings into questions and try to figure out what information will follow. Ask yourself Who?, What?, Where?, When?, Why?, and How? (the 5 W’s and 1H of journalism). By asking these questions and then seeking the answers to the questions, you can concentrate and focus your efforts.

R: Read – Now read the material that follows the first heading. Look for answers to your questions, spending most of your time on material that seems important. This question & answer process can help you become an active, rather than passive reader.

R: Recite – After you complete a section, look away from the material. Now see if you can recite the important points. This recitation will make clear exactly what you know and what you don’t know. Reread as necessary until you can recite all of the important points in a section.

R: Record – As you recite important points (above), you also may want to record or write down all the information you feel you must remember. Record on a separate sheet of paper or on study cards. This recorded information could be in the form of questions and your answers.

R: Review – Now go back over all the material. Reread the headings. Study until you can recite to yourself all the important ideas in the chapter. Refer to your written notes as you review.
Reading Strategies Tip Sheet

Here are some ways to help improve your reading skills and comprehension.
(Metacognitive Strategies)

1. Clarify a purpose for reading.
2. Read the title to get some information.
3. Look over the entire text before reading.
4. Recognize important textual cues (such as bold face type, headings, topic sentences, signal words, etc.)
5. Use writing as a tool to help you think.
6. Generate questions before, during and after reading.
7. Identify the important ideas in the text.
8. Visualize what you are reading.
9. Think about what you already know about the topic and make connections to your prior knowledge.
10. Make predictions about what might happen.
11. Identify potential problem areas.
12. Problem solve by thinking, “If …then …”
14. Stop periodically to review and assimilate information; make sure what you’ve read makes sense.
15. Underline important text.
16. Circle important words and phrases in the text.
17. Write notes in the margins.
18. Rewrite the text in your own words.
19. Draw a semantic map, flowchart or diagram.
20. Change the rate at which you read.
21. Reread previously read text.
22. Skim ahead to search for new information.
23. Use outside resources such as different texts, friends and experts in the field.
24. Use a study skill such as outlining, note taking, or the **SQ4R method**. S = Survey the material. Q = Turn the first heading into a **question**. 4R = Read the material that follows the first heading. Without looking at the section, recite the answer to the question you asked. **Record** notes to help you remember the answers and other important ideas. **Review** the material by going over headings and questions again.
POINTS TO REMEMBER ABOUT MARKING YOUR TEXT

Text marking is really a fairly easy skill if you remember to use some basic strategies. Don’t forget to read at least an entire paragraph before you begin to mark. Mark all of the important information that you want to review again before the exam. Use a simple system for marking that includes marking meaningful phrases and adding marginal notes or questions. Be sure you evaluate your marking both before and after the exam to test how effective it is. Finally, use the following example and your own texts to practice marking.

MARKING MATH AND SCIENCE TEXTS

If you are taking a math or science course, you may be using text that has formulas and sample problems throughout the chapters. You can effectively mark this kind of text, too. Box or highlight all formulas, as well as the problems that you want to review. Be sure that you also underline, highlight, or pencil code the text material that explains or discusses that formula or problem. A lot of students ignore the prose material that is included in math and science texts. This material is as important as, or perhaps even more important, than the problems themselves.

MARKING LITERATURE TEXTS

Whether you are reading a short story, a play, a novel, or another type of literature, you can and should mark as you read. Marking a literary work is a little different than marking a political science textbook, but the same general principles apply. Instead of looking for main ideas and supporting details, though, you need to look for themes, major plot events, key information about the characters, examples of foreshadowing or irony, and so on. Until you become familiar with all of these literary terms, highlight or underline anything that seems to stand out as you read the story or play. Making marginal notes is also helpful in marking literature. Remember, also to make notes in the margin of your book as your instructor refers to specific lines or pages during the lecture.

MARKING OUTSIDE READINGS

Many professors assign reserved or library readings as part of the course material. These articles or parts of textbooks are not available for purchase. Instead, one or two copies of the material are placed on reserve in the library for students to read. You have three basic options when it comes to reading reserved material. You can just read the material and hope that you will remember it for the exam (not a very good alternative). Second, you can read the material and take notes on it as you read. This is an effective method but does require a good bit of time in the library. Finally, you can choose the most popular method for dealing with library material: photocopy it and then mark it later. Because time is scarce for many students, this method is becoming more and more popular. Whatever you do, be sure to read, mark, and then review these outside readings before the exam; information from them surely will be included on the test.
THE CURVE OF FORGETTING

The next time you have a test or quiz for which you must study, use this information about *The Curve of Forgetting* to spread the learning.

Curve of Forgetting

Dr. F. Stanton pointed out the “curve of forgetting” to military officers returning to academic study after being out of school for several years.

Suppose you read an assignment today. When will *forgetting* take its greatest toll? The greatest loss will be within one day. Arrange your first review to check this drop. Place it from

- The first student studied one hour on September 30, and six weeks later retained very little.
- The second student studied only 30 minutes on September 30 but spaced out reviews. On November 8 it took this student just a five minute review to bring back the vital information with 100 percent mastery.
- Both students studied just one hour, but the one who spaced out the review had far better retention.

12-24 hours after you study. Reinforce immediately.

You can retain longer through spaced reviews. You can place your first review to minimize forgetting.

![First Student](chart.png)

![Second Student](chart.png)
MEMORY TIPS

Jot your personal comments on the suggestions under the “headings” in the left-hand column.

1. **What’s your attitude?**
   What is your very favorite thing in life – a person? Baseball? Music? Reading? How tough is remembering new information about the particular thing? That answer reveals your “memory potential.” Are you impressed? You should be? (One student knows the batting averages of all the best players in the baseball leagues.)
   “But,” you say, “math is no fun.” Keep telling yourself that and it never will be fun. Your prejudices affect your learning. Instead, give some extra time to the subjects you dislike. Research indicates that the more you know about any subject, the more interested you become. Positive achievement is likely to follow. Don’t be victimized by your own biases. You more readily forget what you don’t agree with, so you’ll reap remembering dividends by keeping an open mind!

2. **Do you intend to remember?**
   Or do you just want to get the assignment out of the way? Without a conscious decision to remember, you probably won’t, and no one remembers what she or he has never really learned in the first place.
   Have high expectations of yourself! Focus on how good you’ll feel after reading, when you know the material instead of just the three songs that played on the radio while you “studied.” Also, studying subjects that are different, rather than similar, one after another (for example, history, then math rather than political science), guards against interference and forgetting.

3. **Do you personalize the material?**
   Have you ever forgotten a friend’s comments on why you’re special? Or a compliment paid you by someone you truly admire? Probably not. This shows the power of your memory if you are personally involved. As much as you can, follow this same principle in studying. For example, while reading, ask yourself, “How am I affected by this?”
4. Do you “chunk” the learning? Right now, list three major ideas from the last reading assignment you completed. If you can’t do it, then you’re choosing to operate at a handicap. When you’ve finished studying a chapter and can recall seven or so major points, you’ve got those “key thoughts” that trigger your recall of the related significant details. A prime contributor to comprehension and memory, then, is to categorize ideas.

5. Do you “handle” the material? The more means you use to learn new material, the greater the likelihood you’ll remember it. Draw pictures to illustrate points. Talk over assignments with friends. Recite information to yourself. Write notes on important points. Each one of these aids will increase your chance of recalling information the next time you need it. “Handling” the new ideas results in their moving from short-term to long-term memory. Remember – if you don’t use it, you will lose it!

6. Do you recite and review regularly? Without any special study approach, you forget 80 percent of what you learn within two weeks! But you can reverse that trend if you recite (speak aloud) immediately after studying. Thereafter, review the content about once a week. When you feel that you’ve mastered the content, review it again – overlearn it – just to be sure.

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### A MEMORY HABITS CHECKLIST

Write yes or no to each of the following questions:

<table>
<thead>
<tr>
<th>Question</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Try to get <em>interested</em> in the subject?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>2. <em>Intend</em> to remember the content?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>3. Give the subject your undivided <em>attention</em>?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>4. Try to keep an <em>open mind</em> to new ideas?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>5. Feel <em>confident</em> that you can remember if you want to?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>6. Search for the <em>organization</em> of ideas (using heading, summary)?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>7. Take care to accurately <em>understand and learn</em> the material in the first place?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>8. <em>Recite</em> from memory or quiz yourself immediately after reading each major section in a chapter?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>9. <em>Review</em> your class notes and readings once a week or more?</td>
<td>_____</td>
<td>_____</td>
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<tr>
<td>10. Use several methods to <em>reinforce</em> learning and remembering, i.e., note taking, discussing with friends, and reciting aloud?</td>
<td>_____</td>
<td>_____</td>
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<tr>
<td>11. Try to <em>relate</em> what you learn to what you already know and to your own life?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>12. Study subjects that are <em>different</em>, rather than similar, one after the other (for example, study history, then math rather than political science) to avoid interference and forgetting?</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>13. Study in <em>thirty- to forty-minute study sessions</em>, with short breaks in between, to keep comprehension and memory at peak levels?</td>
<td>_____</td>
<td>_____</td>
</tr>
</tbody>
</table>
Managing Your Time

One of the biggest obstacles to succeeding is failing to plan. Managing your time requires planning. Almost everyone has failed to plan at one time or another and suffered the consequences. When we don’t manage our time, it manages us. You may find the following suggestions helpful:

Making Progress

1. **Turn big jobs into smaller ones.** Successful people will tell you that they often divide up their big jobs into smaller, more manageable steps. Spreading a project over a reasonable period of time will reduce the pressure that comes from letting everything go until the last minute. Tackle your tasks as they need to be done, and develop a process for working through the big jobs. Then follow your plan.

2. **Keep a weekly schedule.** If you haven’t started a personal calendar to keep track of appointments and assignments, what are you waiting for? You’ll have your day at a glance and be twice as likely to keep the appointments you write down. Design your planner to meet your needs; the more personalized you make it, the more likely you’ll use it.

   Note ➫ Planners and calendars can be purchased at a reasonable cost if that seems easier than making your own. Also, most word-processing programs have built-in note pads and calendars.

3. **Make lists.** Making a daily list of things to do may strike you as overdoing it at first, but you’ll soon change your mind. You’ll also rest easier at night, knowing that you’ve got the next day covered.

4. **Plan your study time.** Good advice, but most of us seldom take it. Good planning means having everything you need where you need it. Schedule your study time as early in the day as you can, take short breaks, keep snacks to a minimum, interact with the page by asking questions (out loud, if not one objects), and summarize what you’ve learned before turning out the light.

5. **Stay flexible.** Plans do change and new things can pop up daily. Be realistic, willing to change those events that can be changed and exercising patience for those that cannot. You’ll save yourself lots of wear and tear if you remain flexible and upbeat.
Managing Your Time in College
[Contributed by the Flexible Studies Department]

Once you begin college, you will find that it is your responsibility to plan your time much more than in high school where your time was managed for about 6 hours a day without much input from you. At MCC there are several ways to take classes and all require managing your time. Some of you may choose to take some classes in the Flexible Studies Department. In a traditional classroom setting there is a strict schedule planned by the teacher. In Flexible Studies, there is a time schedule, but it is suggested, not mandatory. The flexibility and lack of time constraints in a self-paced environment can add to the enjoyment of learning without the stress of being ready for an exam on a given date. However, it puts the burden of time management on you, the student. Therefore, there are several important things of which to be aware when you take a class in Flexible Studies. Many of these also apply to online courses and to lecture classes.

1. **The semester is only 15 weeks.** This seems like forever on the first day of class, but is actually not very long to learn all of the required material.

2. **Follow your syllabus carefully.** Your syllabus has suggested due dates. This means that you may proceed faster than the syllabus suggests and finish the class early. This also means that you may proceed slower. If you need to take longer with the class because it is difficult and you are putting in 6-12 hours per week for the course, not being able to complete the course and receiving an IP is fine. However, if you procrastinate and simply do not put in the necessary time each week, you will not be able to finish the course, and
you will not be allowed to take the next course in the course sequence until such time as the current one is completed.

3. **Schedule study time.** Students who are not having great difficulty with the course should treat the syllabus and the suggested due dates as if they were compulsory due dates. Put in the necessary time to get the week's work completed by the end of each week or at least the first class meeting of the next week.

4. **Plan your study time.** Study each day for 1 hour or every other day for 2 hours. Break the week's work into smaller manageable tasks to be completed each day. Trying to do all of the work in one large block of time is not a very efficient way to study. Most of us concentrate for short periods of time. If you do not know how to plan your time, your instructor can give you suggestions in the beginning to help you.

5. **Self-discipline is very difficult for most of us.** is very difficult for most of us. One of the goals of Self-Paced Studies is to become an independent learner. This takes self-discipline. Life has many distractions which often look more appealing than studying. Resist temptation; keep to a study schedule.

6. **Scheduling is flexible.** You were asked to indicate days and times that you will be working on your course in Flexible Studies, but these times and days may be changed if necessary. However, you are expected to be here for 3 hours each week just like any classroom section.

7. **Ask questions.** Your instructor is here to guide you in your learning. He/she wants to help you with material that you do not understand to help you become an independent learner.

*If you follow these guidelines, you will become a more independent learner and you will enjoy the flexibility of taking courses in Flexible Studies.*
### TIME MANAGEMENT CHART FOR WEEK OF ____________________

<table>
<thead>
<tr>
<th>Hours</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
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<tbody>
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</table>

Use color codes for:  
A) work schedule:  
B) study time and location:  
C) class meeting time

**Plan Study Time:** Multiply the number of course credits by two (2), this equals the hours needed each week for study time (Example: 9 credits X 2 = 18 hours per week for study time).
In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. During the 1990's a new group of cognitive psychologists, led by Lorin Anderson (a former student of Bloom), updated the taxonomy to reflect relevance to 21st century work. The two graphics show the revised and original Taxonomy.

Note the change from nouns to verbs associated with each level.

*Note that the top two levels are essentially exchanged from the traditional to the new version.*

<table>
<thead>
<tr>
<th>Level</th>
<th>New Version</th>
<th>Old Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remembering:</td>
<td>can the student recall or remember the information?</td>
<td>define, duplicate, list, memorize, recall, repeat, reproduce state</td>
</tr>
<tr>
<td>Understanding:</td>
<td>can the student explain ideas or concepts?</td>
<td>classify, describe, discuss, explain, identify, locate, recognize, report, select, translate, paraphrase</td>
</tr>
<tr>
<td>Applying:</td>
<td>can the student use the information in a new way?</td>
<td>choose, demonstrate, dramatize, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write</td>
</tr>
<tr>
<td>Analyzing:</td>
<td>can the student distinguish between the different parts?</td>
<td>appraise, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test</td>
</tr>
<tr>
<td>Evaluating:</td>
<td>can the student justify a stand or decision?</td>
<td>appraise, argue, defend, judge, select, support, value, evaluate</td>
</tr>
<tr>
<td>Creating:</td>
<td>can the student create new product or point of view?</td>
<td>assemble, construct, create, design, develop, formulate, write</td>
</tr>
</tbody>
</table>
What are Higher Order Thinking Skills (HOTS)?

Thinking is a conscious act that requires space and time. You do a lot more thinking than you perhaps realize, simply in the way that you carry out your everyday life. Deciding what clothes to wear and remembering to take your keys with you when you leave the house require conscious thought. Mastering the skills of higher order thinking requires your commitment and dedication.

Simple thinking skills include things like learning facts and learning how to remember these. Higher Order Thinking Skills include skills such as creative and critical thinking, analysis, problem solving and visualization. The term first became popular with the 1956 publication of Bloom's Taxonomy of Educational Objectives which set out an educational reform that included Higher Order Thinking Skills. Today such skills are also commonly referred to as Advanced Thinking Skills.

In his reform, Bloom categorized thinking skills into 6 groups listed in order of complexity:

- **Knowledge acquisition**: Memorize how to do a task.
- **Comprehension**: Question, discuss and explain how to do a task.
- **Application**: Extract and transfer this knowledge.
- **Analysis**: Categorize, characterize, compare and contrast.
- **Synthesis**: Collating and creating.
- **Evaluation**: Prioritization, relevancy and judgment.
By first becoming aware of new knowledge and committing this to memory, we are then able to understand and apply this knowledge. By further interpreting, deciphering, questioning, and critiquing such facts and understanding we are able to broaden our mental outlook so as to recreate something new and original by assessing and evaluating the benefits and importance of doing so. This is the skill of higher order thinking; a skill which I prefer to define as the passion and purpose with which to solve problems.

**Why are Higher Order Thinking Skills Important?** Higher order thinking is imperative to progress. No explorer ever discovered anything new by following in the footsteps of those who had been there before. If lower order thinking skills seek to learn and commit to memory knowledge and know how that somebody else has already acquired, then Higher Order Thinking allows for the interpretation and reconsideration of such information so that other application may be used and alternative conclusions drawn. This exposes further fields of knowledge and know-how which may again, be transferred, reapplied and collated to create a new and improved version.

If you are committed to learning, growing and constant evolution then it is vital that you commit yourself to improving your Higher Order Thinking Skills.

Thinking is at the heart of all learning. Thinking makes things that have yet to be perceived possible, thinking facilitates and enhances our ability to perform and produce and pass on such vital information to others who would then do the same.

**This is progress!**
Contact Information

If you would like more information about the strategies found in this handbook, please contact Jo Mucci, Director of First-Year Experience (FYE) & Student Success at Middlesex Community College.

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