Multiple Intelligences, Learning Styles, & Study Skills

## A Resource for Student Success

Introduction

As you (the student) progress up the academic ladder you may find that some things such as concepts, tests/quizzes, workload, and classroom expectations, among other things may become more challenging. This packet is simply a compilation of resources that will hopefully assist you in dealing with the increasing challenges that you face. This will be done by helping you identify your personal preferences and strengths and then apply them to your current study techniques and approaches as a student and learner. It is only when these factors are recognized that one has a blueprint for effectively and efficiently achieving their desired academic outcomes.

Multiple Intelligences

Which are your strengths and which are your weaknesses?
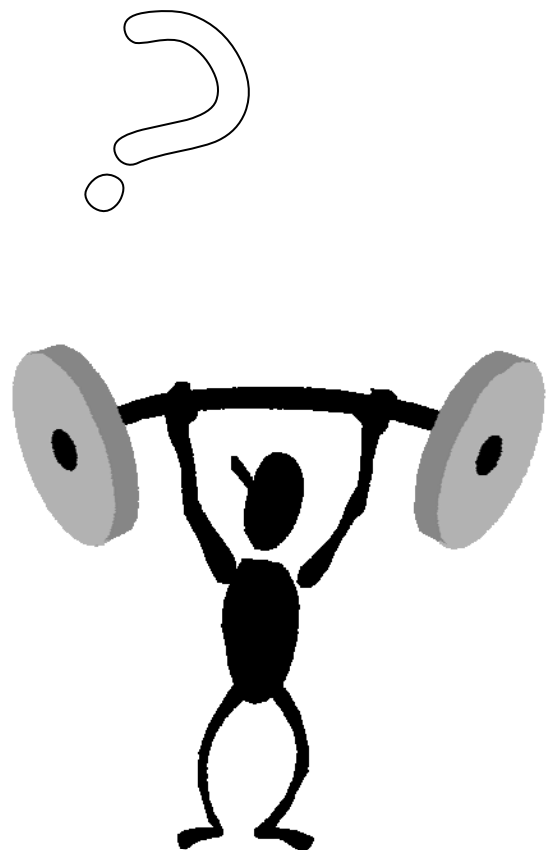
The idea of Multiple Intelligences was proposed by Howard Gardner (1993) and was further described by Thomas Armstrong (2003). Basically Gardner's idea was that people can be intelligent (or smart) in more ways than one. People can be smart: musically, logically, kinesthetically, verbally, visually, interpersonally, intrapersonally, naturally, and more recently Gardner described people as being existentially smart. These different intelligences (particularly the predominant ones) are usually displayed through an individual's preferences, talents, hobbies, etc. You all probably recognize that there are some things that you may excel at such as playing an instrument, while at the same time you find it challenging to solve mathematical problems in class. Considering this scenario it would be fair to say you have a highly developed musical intelligence while your logical intelligence could use some practice. However, it is important to understand that all of us have all nine intelligences, but as mentioned before they are usually varied. The purpose of this section is for you to familiarize yourself with all nine intelligences and to then determine your predominant intelligence(s) and the ones that need some development.

Comparison Table

Gardner's Term	Armstrong's Term
Verbal-Linguistic	Word Smart
Logical-Mathematical	Logic Smart
Visual-Spatial	Picture Smart
Musical	Music Smart
Bodily-Kinesthetic	Body Smart
Interpersonal	People Smart
Intrapersonal	Self Smart
Naturalistic	Nature Smart
Existential	███████████

The above table provides additional terms proposed by Armstrong to describe Gardner's Multiple Intelligences

Prior to examining the different types of intelligences it may be worthwhile to try and make connections to your prior knowledge and to practice making inferences.

Directions: **Without using any references <u>other than a dictionary</u>, match one of the intelligences from the word bank with one of the pictures in the table and briefly explain why you think they belong together.**

Verbal-Linguistic (Word Smart)
Logical-Mathematical (Logic Smart)
Visual-Spatial (Picture Smart)
Musical (Music Smart)
Bodily-Kinesthetic (Body Smart)
Interpersonal (People Smart)
Intrapersonal (Self Smart)
Naturalistic (Nature Smart)
Existential

Picture	Intelligence	Explanation

Now that you have completed the above activity we will proceed with detailed explanations of the nine intelligences. Once this is done you will determine which of the intelligences represent your strengths and which of them represent your weaknesses by completing a Multiple Intelligences Survey.

Verbal-Linguistic (Word Smart)

This intelligence is primarily represented by the use of verbal and written languages.

"*Verbal-linguistic people love words. Words are their primary way of thinking and solving problems. They tend to have excellent auditory receptive (input) skills and verbal expressive (output) skills. They use words to persuade, argue, entertain, or teach. These people are good writers, speakers, or both*" (Connell, 2005, p. 67).

Examples of Career Possibilities

Teacher
Political Leader
Writer/Author
Storyteller

Considering the above description, answer the following questions.

1) Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.

2) How is this intelligence beneficial?

3) How do you use this intelligence on a daily basis?

Logical-Mathematical (Logic Smart)

This intelligence is primarily represented by the use of logic. Logic is described by Armstrong (2003) as a "tool that helps you solve problems" (p. 45).

"*Logical-mathematical people love numbers. They can easily interpret data and analyze abstract patterns. They have a well-developed ability to reason and are good at chess and computer programming. They think in terms of cause and effect*" (Connell, 2005, p. 67).

Examples of Career Possibilities

Teacher
Mathematician
Scientist
Accountant

Considering the above description, answer the following questions.

1) Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.

2) How is this intelligence beneficial?

3) How do you use this intelligence on a daily basis?

Visual-Spatial (Picture Smart)

This intelligence is primarily represented by the use of visualization. Once an image is in one's mind, they can reproduce it in a variety of ways.

"*Spatial people think and process information in pictures and images. They have excellent visual receptive skills and excellent fine motor skills. People with this intelligence use their eyes and hands to create wonderful products. They can build with Legos, read maps, and put together 1,000-piece jigsaw puzzles*" (Connell, 2005, p. 67).

Considering the above description, answer the following questions.

1) Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.

2) How is this intelligence beneficial?

3) How do you use this intelligence on a daily basis?

Musical (Music Smart)

This intelligence is primarily represented by the use, composition, and awareness of music.

Examples of Career Possibilities

Teacher
Musician
Composer
Songwriter

"*Musical people think, feel, and process information primarily through sound. They have a superior ability to perceive, compose, and/or perform music. Musically smart people constantly hear musical tones in their head; they think and feel music. Music connects directly to our emotions in the limbic system and can be sued to enhance memory*" (Connell, 2005, p. 67).

Considering the above description, answer the following questions.

1) Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.

2) How is this intelligence beneficial?

3) How do you use this intelligence on a daily basis?

Bodily-Kinesthetic (Body Smart)

This intelligence is primarily represented by the use and control of one's body.

"Bodily-Kinesthetic people are highly aware of the world through touch and movement. There is a special harmony between their body and their mind. They can control their body with grace and expertise. They are aware of their gut feelings. Those with this intelligence engage in group sports, dance, cheerleading, swimming, gymnastics, and martial arts" **(Connell, 2005, p. 67).**

Examples of Career Possibilities

Teacher
Dancer
Surgeon
Professional Athlete

Considering the above description, answer the following questions.

1) **Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.**

2) **How is this intelligence beneficial?**

3) **How do you use this intelligence on a daily basis?**

Interpersonal (People Smart)

This intelligence is primarily represented by positive interactions and relationships with others.

"Interpersonal people have a strong ability to get along with others, to interact and relate effectively. They are good leaders. They use their insights about others to negotiate, persuade, and obtain information. They like to interact with others and usually have lots of friends. They often select their mentors" (Connell, 2005, p. 68).

Examples of Career Possibilities

Teacher
Therapist
Political Leader
Nurse

Considering the above description, answer the following questions.

1) Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.

2) How is this intelligence beneficial?

3) How do you use this intelligence on a daily basis?

Intrapersonal (Self Smart)

This intelligence is primarily represented by self-reflection and the ability to know oneself.

"Intrapersonal people have a strong ability to know themselves. They know, and accept, their strong, moderate, and weak multiple intelligences. They are able to assume responsibility for their actions and feelings. They have keen intuition and inner wisdom. At an emotional level, they are able to engage in deep introspective thoughts; they have a deep awareness of their inner feelings, ideas, and dreams. People with this intelligence need a lot of time alone to process and create" (Connell, 2005, p. 68).

Examples of Career Possibilities

Teacher
Researcher
Writer
Religious Leader

Considering the above description, answer the following questions.

1) Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.

2) How is this intelligence beneficial?

3) How do you use this intelligence on a daily basis?

13

Naturalistic (Nature Smart)

This intelligence is primarily represented by an appreciation of nature and the ability to construct meaning from the natural world.

"*Naturalistic people have a deep interest in the environment. They like to be in nature and they want to protect it from pollution. They can navigate easily in the natural world. They see the patterns in nature, recognizing the different flora, fauna, rocks and birds*" (Connell, 2005, p. 68).

Examples of Career Possibilities

Teacher
Biologist
Ecologist
Environmentalist

Considering the above description, answer the following questions.

1) Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.

2) How is this intelligence beneficial?

3) How do you use this intelligence on a daily basis?

Existential

This intelligence is primarily represented by the pursuit to answer life's "big" questions.

"*Existentialists are those concerned, often at an early age, with the big, piercing questions: Who am I? Why do we die? What is the meaning of life? I believe that existential intelligence overlaps or coincides with a spiritual awareness and concern for humankind*" (Connell, 2005, p. 68).

Examples of Career Possibilities

Teacher
Religious Leader
Philosopher
Speaker

Considering the above description, answer the following questions.

1) Do you believe this intelligence is one of your strengths or weaknesses (developing areas)? Explain.

2) How is this intelligence beneficial?

3) How do you use this intelligence on a daily basis?

Multiple Intelligences Survey

Put a check next to each sentence that describes you and total the checks for each area.

AREA 1

_____ I like to listen to songs on the radio or a music player (iPod, MP3 player, etc.)

_____ I like to watch music videos on TV.

_____ I like to go to music concerts and hear live music.

_____ I can easily remember tunes, raps, or melodies.

_____ I take music lessons, singing lessons, or play a musical instrument.

_____ I can learn new songs easily.

_____ I like to sing.

Total # of checks in Area 1 =

AREA 2

_____ I like art classes.

_____ I like to draw, paint, and make things with clay.

_____ I enjoy putting puzzles together.

_____ I like to build things using blocks, Legos, and models.

_____ It is fun to play video games.

_____ I can create a picture in my mind to help me think things through.

_____ I notice the different styles of things, such as clothes, cars, and hairstyles.

Total # of checks in Area 2 =

_____ It is fun to play word games such as Scrabble and Mad Libs, do crossword puzzles, and come up with acrostics.

_____ I think it would be fun to keep a journal of my thoughts and ideas.

_____ I like to read books, magazines, and comic books.

AREA 3

_____ I have a good vocabulary and like to learn new words.

_____ I like to talk to my friends on the telephone

_____ I enjoy writing e-mails or texts to my friends

_____ I like to write.

Total # of checks in Area 3 =

Adapted From (2005) J. Diane Connell, Brain-Based Strategies to Reach Every Learner

AREA 4

_____ I like to play with animals and take care of them.

_____ I like going to zoos, parks, or aquariums.

_____ I like being outside.

_____ I like to hike, walk, or run outdoors.

_____ I like to observe nature's changes, such as thunderstorms, rain, snow, and sunshine.

_____ I pay close attention to things in my environment such as trees, rocks, flowers, birds, bugs, and squirrels.

_____ I help to recycle and take care of our environment.

Total # of checks in Area 4 =

AREA 5

_____ I like to do science experiments and go to science museums.

_____ I find arithmetic and math problems interesting.

_____ I can do math problems in my head and make good estimates.

_____ Numbers are really interesting to me.

_____ I like games like chess or computer games where you have to think a lot.

_____ I like TV shows like *ZOOM*, *National Geographic*, and *Nova* that talk about science and math.

_____ It is fun to solve mysteries.

Total # of checks in Area 5 =

AREA 6

_____ I like to dance.

_____ I like to play sports such as baseball, soccer, hockey, or football.

_____ I like to build models or do beading, sewing, macramé, or carpentry.

_____ I enjoy acting in plays or skits or playing charades.

_____ I like to move when I am thinking about things.

_____ I like activities such as the martial arts, tennis, running, jogging, biking, skateboarding, or gymnastics.

_____ I can sometimes "feel" the right answer.

Total # of checks in Area 6 =

Adapted From (2005) J. Diane Connell, Brain-Based Strategies to Reach Every Learner

AREA 7

_____ I like to be with my friends often.

_____ I like to help those who need help.

_____ I like to read books or see movies about people and their lives.

_____ I can usually tell how other people are feeling.

_____ It is fun for me to organize activities at home and at school.

_____ I would rather spend time with others than spend time alone.

_____ I like to talk in class discussions.

Total # of checks in Area 7 =

AREA 8

_____ I like doing things by myself.

_____ I would rather work by myself than with other students.

_____ I like to spend time thinking or writing about things that matter to me.

_____ I like to play computer games.

_____ I usually know what my feelings are.

_____ I like to write my thoughts and feelings in a diary or journal.

_____ I know what things I am good at, and what things I am not so good at.

Total # of checks in Area 8 =

AREA 9

_____ I like to discuss questions about life.

_____ Religion or spirituality is important to me.

_____ I like learning new things when I understand how they apply to me.

_____ I like to think about the possibility of other forms of intelligent life (aliens).

_____ I am interested and concerned with what happens around the world.

_____ I like to concern myself with the "big picture" instead of many small details.

_____ I like activities that allow me to relax and/or meditate.

Total # of checks in Area 9 =

Adapted From (2005) J. Diane Connell, Brain-Based Strategies to Reach Every Learner

Multiple Intelligences - <u>My Strengths and Weaknesses</u>

<u>Scoring</u> - *Take the total number of checks for each area and write them into the appropriate space below.* – <u>*HIGHLIGHT YOUR TOP THREE (3)*</u>

Area	Total # of Checks	Intelligence
1		Musical (Music Smart)
2		Visual-Spatial (Picture Smart)
3		Verbal-Linguistic (Word Smart)
4		Naturalistic (Nature Smart)
5		Logical-Mathematical (Math Smart)
6		Bodily-Kinesthetic (Body Smart)
7		Interpersonal (People Smart)
8		Intrapersonal (Self Smart)
9		Existential

A score of 5 or more indicates a very strong area; a score of 3-4 indicates a moderate area; and a score of less than 3 indicates a developing area.

Adapted From (2005) J. Diane Connell, Brain-Based Strategies to Reach Every Learner

Now that you have a working understanding of the nine different intelligences and have identified your strengths and developing areas, it may be helpful to create a visual representation of the completed table on the previous page. Armstrong (2003) recommends that you do this by treating the circle below like a pie. You need to divide the pie into nine slices and the size of each slice should be representative of each of the intelligences. Since this may be tricky to start, you may want to use a pencil to draw a rough sketch. Once you have appropriately drawn the pie's slices you should label each slice with the word of the intelligence it represents and you should then color each slice (a different color). <u>It is important to know about every piece that makes up your "intelligence pie," not just the large or small pieces</u>. With this information you can use your predominant intelligences to your advantage and you can continually develop the ones that may not be as strong. <u>Refer to the example on the next page before starting</u>. If you find it too difficult to create an "intelligence pie" you can simply show your intelligences in a bar graph where each bar represents an intelligence.
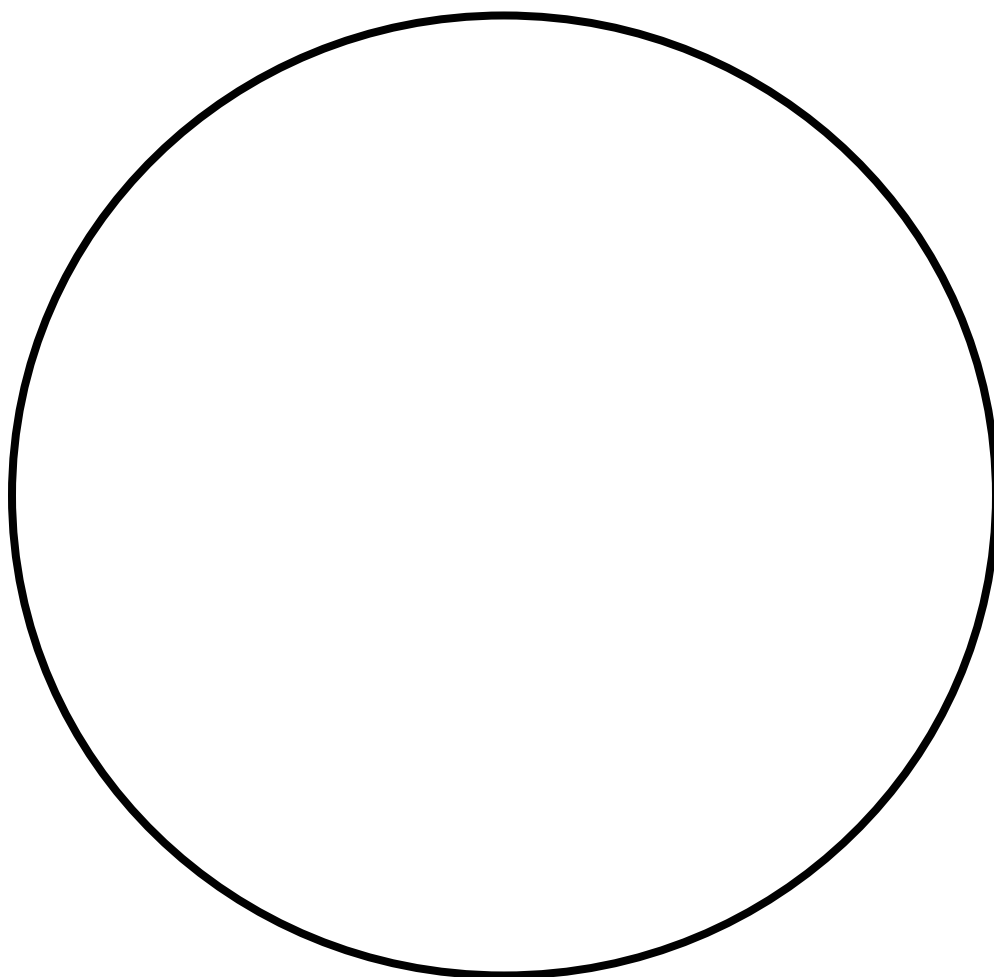
Multiple Intelligences – Mr. Jones' Strengths and Weaknesses

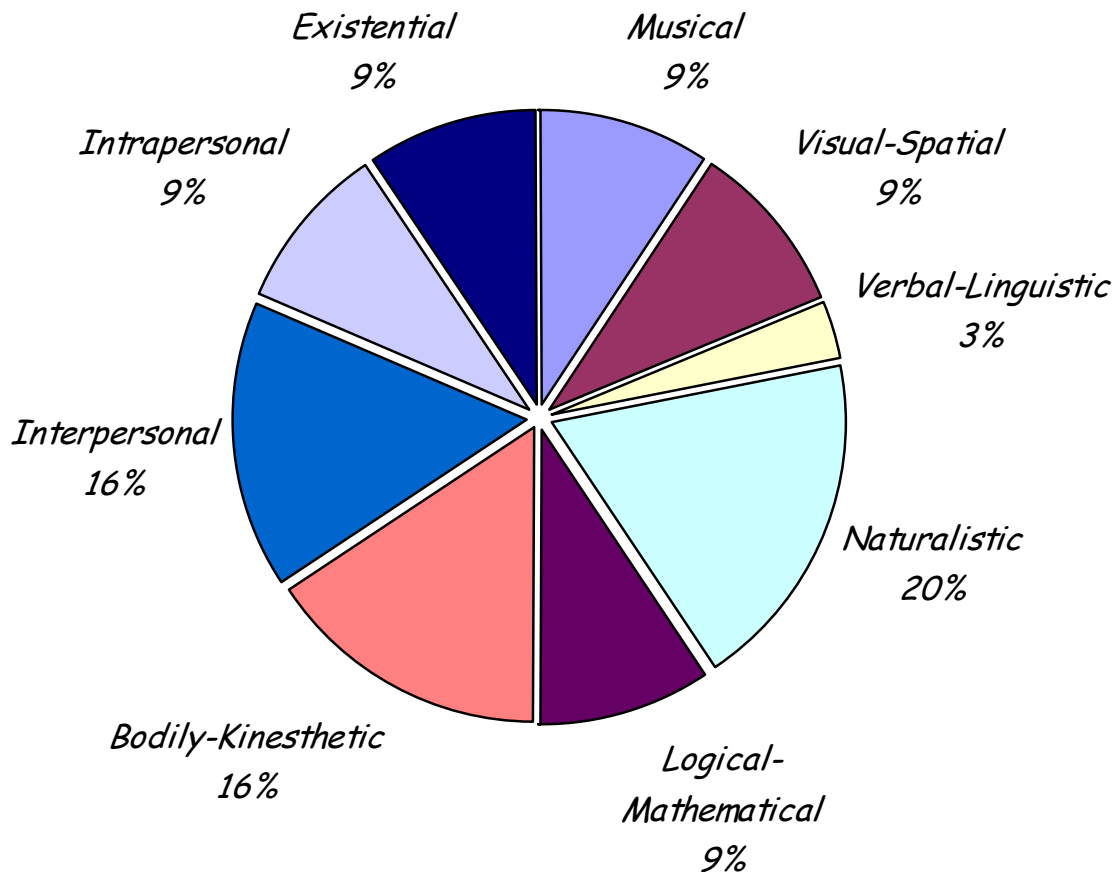| Area	Total # of Checks	Intelligence
1	3	Musical (Music Smart)
2	3	Visual-Spatial (Picture Smart)
3	1	Verbal-Linguistic (Word Smart)
4	6	Naturalistic (Nature Smart)
5	3	Logical-Mathematical (Math Smart)
6	5	Bodily-Kinesthetic (Body Smart)
7	5	Interpersonal (People Smart)
8	3	Intrapersonal (Self Smart)
9	3	Existential

The multiple intelligence pie below was created by placing the data to the left into an Excel spreadsheet and creating a pie chart. You can also determine what percentage of the pie each intelligence makes up by adding up the total number of checks, dividing the total number of checks for each intelligence by that number, and multiplying it by 100. For example, the total number of checks in my survey is thirty-two. If I want to figure out how much of my pie is composed of the musical intelligence, I will just divide three (the number of checks for my musical intelligence) by thirty-two (the total number of checks), and multiply the remaining number by 100.

3/32 = 0.09 → 0.09 (100) = 9%

Mr. Jones' Multiple Intelligence Pie

- Existential 9%
- Musical 9%
- Intrapersonal 9%
- Visual-Spatial 9%
- Verbal-Linguistic 3%
- Interpersonal 16%
- Naturalistic 20%
- Bodily-Kinesthetic 16%
- Logical-Mathematical 9%

As a final review of the nine different intelligences presented thus far you should complete the following activity.

Directions: Read the following descriptions and try to determine which of the multiple intelligences is being described. **PLEASE REMEMBER THAT ALTHOUGH YOU ARE IDENTIFYING ONE PRIMARY INTELLIGENCE IN THE FOLLOWING ACTIVITY ALL PEOPLE HAVE EACH OF THEM, BUT THEY MAY BE EXPRESSED TO DIFFERENT DEGREES.**

Verbal-Linguistic (Word Smart)
Logical-Mathematical (Logic Smart)
Visual-Spatial (Picture Smart)
Musical (Music Smart)
Bodily-Kinesthetic (Body Smart)
Interpersonal (People Smart)
Intrapersonal (Self Smart)
Naturalistic (Nature Smart)
Existential

Rose enjoys her own world of daydreams and yet astounds us with her insight and interpretation. She needs time to reflect, think, and complete self-assessments that help her take control and be responsible for herself.

This description represents what intelligence?

_____

Kay is creative and sees her work in terms of pictures and colors. She invents in order to learn and will see complex visual and spatial relationships, abstract geometric patterns, and renderings of impressions of common objects.

This description represents what intelligence?

_____

Kristen enjoys gazing at the clouds and classifying them according to their characteristics. She enjoys nature and is a professional when it comes to organizing all that she observes.

This description represents what intelligence?

_____

Jeff thinks well in words and expresses himself beautifully. He has a well-developed language ability, enjoys reading, writing, listening, speaking, and is able to link new knowledge to prior experiences.

This description represents what intelligence?

_____

Joan tunes in to the world through touch and movement. She enjoys sports and physical movement, has a keen sense of direction, and a sense of timing when moving her body. She is full of energy and is a proactive learner.

This description represents what intelligence?

_____

Dave enjoys his fellow students and appreciates their diversities. He likes to study people in other cultures as well as their history and art. He is a social person, is dependent on others for success, and is a team player.

This description represents what intelligence?

_____

Bonnie is immersed in sound and movement. She is tuned to the sounds and rhythms around her and responds by actions.

This description represents what intelligence?

_____

Roy is an abstract thinker who enjoys calculations, problem solving, critical thinking, interpreting data, categorizing facts, and using technology. As he uses numbers, he is precise and accurate.

This description represents what intelligence?

_____

Candice is a reflective person who constantly concerns herself with global issues. She views issues in ways that tend to be unique when compared to her peers. She is typically not concerned with "fitting in" and could be considered a non-conformist.

This description represents what intelligence?

_____

Learning Styles

How do you learn best?

Everyone typically has preferences when it comes to many things in life. For example, some people prefer football as opposed to baseball, trucks instead of cars, spicy foods rather than mild, rap music in lieu of country. Whatever the case may be, preferences often influence some aspect of what we do or how we do it. When it comes to learning people also have preferences. Think about some of your past experiences in a classroom. What did you prefer regarding how the teacher presented the information? What did you not prefer? I am sure some very detailed things popped into your head when considering these questions. The reason why you prefer some teaching styles as opposed to others is because of your learning style(s). For instance, if the teacher's primary method of delivery is through lectures then this may not appeal to you if visuals and movement are necessary for you to completely understand something. Before you determine your learning style(s) you should reflect on your current preferences as they relate to your learning. The following is a listing of things I prefer and things I do not prefer when learning.

Things Mr. Jones Prefers When Learning	Things Mr. Jones Does Not Prefer When Learning
• Many visuals • Opportunities to manipulate "things" – hands-on-activities • Time allotted for reflection after learning new concepts	• Discussing things as a group • Reading out loud • Just sitting at a desk all the time

Directions: Complete the following table by listing at least three characteristics of teaching that appeal to you and three that do not appeal to you. An "idea bank" has been provided to assist you, but these are representative of only a few possibilities. Therefore, do not feel like you are limited to only these.

Idea Bank	
class discussions/debates	speeches, taking notes
visuals	stories
silent reading	reading out loud
singing songs	labs or hands-on-activities
quiet time to think and reflect	group presentations
using computers (for webquests, PPT, etc.)	watching videos
working in groups	working individually
lectures (sitting and listening)	moving around the classroom

Things I Prefer When Learning	Things I Don't Prefer When Learning

Auditory Learning Style ("Learning by Hearing")

This learning style focuses on an individual's ability to learn by listening to spoken language.

"*They learn best through verbal lectures, discussions, talking things through and listening to what others have to say. Auditory learners interpret the underlying meanings of speech through listening to tone of voice, pitch, speed and other nuances. Written information may have little meaning until it is heard. These learners often benefit from reading text aloud and using a tape recorder*"
(http://www.ldpride.net/learningstyles.MI.htm#Auditory%20Learners:).

Considering the above description, answer the following question.

1) **Do you believe this is one of your learning styles? Why or why not?**

Suggestions to Help Optimize An Auditory Learning Style
From http://www.ldpride.net/learning_style_work.html

- participate in class discussions/debates
- make speeches and presentations
- use a tape recorder during lectures instead of taking notes
- read text out aloud
- create musical jingles to aid memorization
- create mnemonics to aid memorization
- discuss your ideas verbally
- dictate to someone while they write down your thoughts
- use verbal analogies, and story telling to demonstrate your point

Visual Learning Style ("Learning by Seeing")

This learning style focuses on an individual's ability to learn by seeing/visualizing.

"These learners need to see the teacher's body language and facial expression to fully understand the content of a lesson. They tend to prefer sitting at the front of the classroom to avoid visual obstructions (e.g. people's heads). They may think in pictures and learn best from visual displays including: diagrams, illustrated text books, overhead transparencies, videos, flipcharts and hand-outs. During a lecture or classroom discussion, visual learners often prefer to take detailed notes to absorb the information" (**http://www.ldpride.net/learningstyles.MI.htm#Auditory%20Learners:**).

Considering the above description, answer the following question.

1) **Do you believe this is one of your learning styles? Why or why not?**

Suggestions to Help Optimize A Visual Learning Style
From http://www.ldpride.net/learning_style_work.html

- use visual materials such as pictures, charts, maps, graphs, etc.
- have a clear view of your teachers when they are speaking so you can see their body language and facial expression
- use color to highlight important points in text
- take notes or ask your teacher to provide handouts
- illustrate your ideas as a picture or brainstorming bubble before writing them down
- write a story and illustrate it
- use multi-media (e.g. computers, videos, and filmstrips)
- study in a quiet place away from verbal disturbances
- read illustrated books
- visualize information as a picture to aid memorization

Kinesthetic Learning Style ("Learning by Doing")

This learning style focuses on an individual's ability to learn by doing.

"*Tactile/Kinesthetic persons learn best through a hands-on approach, actively exploring the physical world around them. They may find it hard to sit still for long periods and may become distracted by their need for activity and exploration***"**
(**http://www.ldpride.net/learningstyles.MI.htm#Auditory%20Learners**:).

Considering the above description, answer the following question.

1. **Do you believe this is one of your learning styles? Why or why not?**

Suggestions to Help Optimize A Kinesthetic Learning Style
From http://www.ldpride.net/learning_style_work.html

- take frequent study breaks
- move around to learn new things (e.g. read while on an exercise bike, mold a piece of clay to learn a new concept)
- work at a standing position
- chew gum while studying
- use bright colors to highlight reading material
- dress up your work space with posters
- if you wish, listen to music while you study
- skim through reading material to get a rough idea what it is about before settling down to read it in detail.

Learning Styles Survey

Read each statement and circle the answer(s) that seems most like you.

1. How do you like to learn something new?
   a. By listening to my teacher tell me about it first.
   b. By watching my teacher do it first.
   c. By doing it myself.
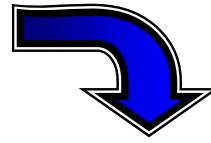
2. What would you like to do most in your free time indoors?
   a. Read a fun book, comic book, or magazine.
   b. Paint, color, draw, or sketch.
   c. Build something or dance.

3. What would you like to do most on weekends?
   a. Talk on the phone with my friends or IM friends.
   b. Play a musical instrument, create artwork, listen to music.
   c. Play sports.

4. What is the best way for you to remember a telephone number?
   a. Say the number out loud over and over as I dial.
   b. Picture the numbers in my head.
   c. Write all of the numbers in the air.

5. What do you like the most when you see a movie?
   a. What the main characters say to each other – the dialogue.
   b. The clothes they wear, the scenery, and the special effects.
   c. How I feel during the movie (happy, scared, mad).

Adapted From (2005) J. Diane Connell, Brain-Based Strategies to Reach Every Learner

6. When you read a story, which of the following happens?
   a. I think about the meaning of the words.
   b. I see pictures in my head about what I am reading.
   c. I feel what the characters are feeling.
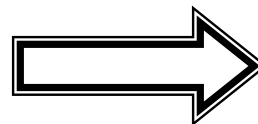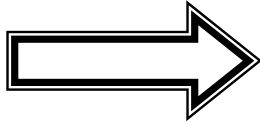
7. How would you prefer to describe an "unusual animal" to someone?
   a. Explain the animal in words.
   b. Draw a picture of the animal.
   c. Use my body to imitate the animal.

8. I understand something best after I
   a. think about it.
   b. see it.
   c. try it out.

9. One of my favorite ways to spend time is
   a. listening to music.
   b. playing video games.
   c. going shopping.

STOP

10. When I meet someone new, I will mostly remember
    a. what he or she said.
    b. what he or she was wearing.
    c. how he or she acted, or how I felt.

Scoring – *Add up all of your points in each category; record your scores here.*

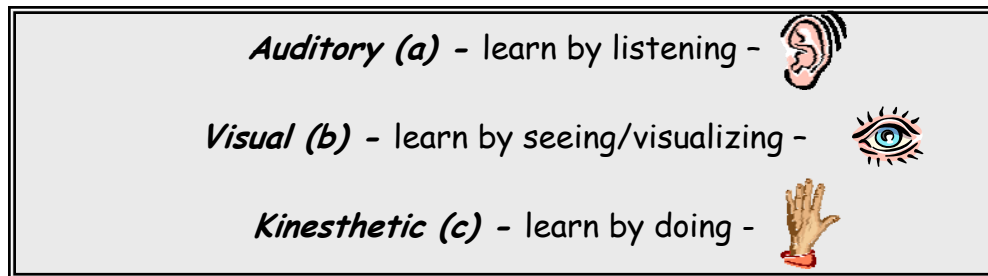|	a's (auditory learner)
	b's (visual learner)
	c's (kinesthetic learner)

Some people will have a strongest way to learn, some will have two ways that are almost equally strong, and others will be able to learn all three ways.

Adapted From (2005) J. Diane Connell, Brain-Based Strategies to Reach Every Learner

Now that you have been exposed to the three primary learning styles and have identified which one(s) apply to your preferences, you should complete the following review activity.

<u>Directions</u>: Read the following descriptions and try to determine which learning style or styles are being described. Simply write the letter(s) (a, b, c) on the line.

> *Auditory (a)* **-** learn by listening –
>
> *Visual (b)* **-** learn by seeing/visualizing –
>
> *Kinesthetic (c)* **-** learn by doing -

1. _____ Kristen had a very difficult time understanding the structure of an atom when Mr. Smith was describing it with words, however it all made sense once he **showed her** a diagram.

2. _____ Theresa really enjoys and understands the different concepts in her technology class because she gets to **manipulate and build** many things.

3. _____ Chris seems to have the uncanny ability to do well in class when he never really takes notes or studies – he just **listens** to the teacher lecture.

4. _____ Tara is very good at giving presentations in class. She is **animated**, she **speaks clearly**, and **she creates great visuals**.

5. _____ Tyler excels in art class because it allows him to take what he **envisions** and **create** some type of product, whether it is a drawing, painting, or sculpture.

At this point you have determined your strengths and weaknesses (developing areas) as they pertain to the multiple intelligences and you have determined your learning style(s). Keeping all of this information in mind you will now be exposed to a variety of techniques and skills related to studying. It will be up to you to determine which techniques or skills will be beneficial for you while considering the previously identified characteristics about you as a student. It is also important for you to understand that the following section is a collection of different strategies and considerations that is not all encompassing. What I mean by that is there are many possibilities and variations when it comes to study skills so there may be some ways to study that are not present. If you do utilize a technique or strategy that enables you to be successful in school and it is not there, please let me know because others may also be able to benefit from it.

RECAP

Directions: List the multiple intelligences (strengths and weaknesses) and the learning styles as they relate to you.

My Multiple Intelligences	
Strengths	Weaknesses (developing areas)

My Learning Style(s)

Study Skills
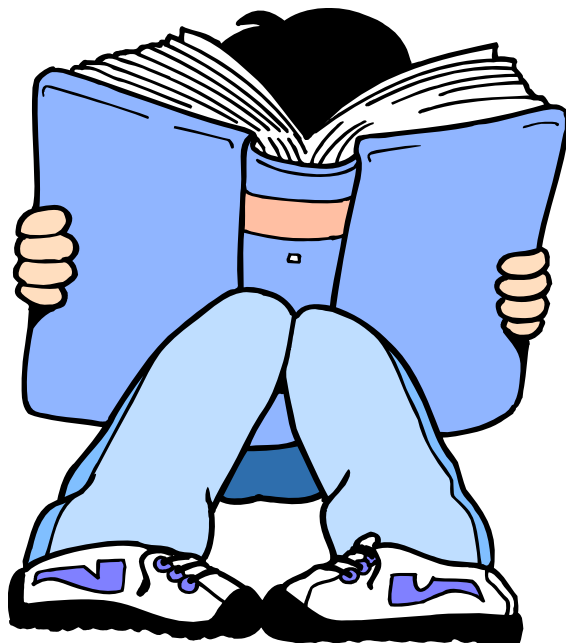
Prior to focusing on various study skills and techniques it is important for you to acknowledge and utilize some very basic considerations and resources. These considerations and resources are so basic and always at your immediate disposal that you may tend to forget about them even though they are invaluable. Carefully read the following five descriptions and ask yourself the question, "Do I take all of these into consideration?" After the five "basics" you will find more specific study skills and techniques that you experiment with throughout the year.

How can I optimize my study habits?

1
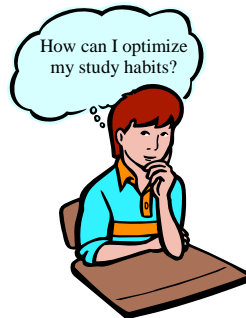
Maintain a Positive Attitude Towards Learning & Intend to Remember

If you can motivate yourself to care about what is going on and to pay attention you will allow your mind to open up to what is being taught or studied and this will surely increase your ability to learn, remember, and appreciate the material. This requires discipline, concentration, and the understanding that teachers are not there to waste your time, but to equip you with the "brain food" necessary to be a successful person.

2

Search for and Identify Connections Between what you Learn in School and What you do in Your Daily Lives

Research shows that when students are able to connect what they are being taught in school to their prior knowledge, learning is much more likely. Connell (2005) says "This strategy helps students create networks of concepts that are linked together; these help create numerous neural connections" (p. 109). Therefore, if you take the time to apply and relate "stuff" from school to your life out of school there will surely be an increase in what your mind takes in. So, those common statements made by many students, "why do we need to know this" or "when will we ever use this" should never be made because there is always a connection, you (with the assistance of your teachers) just have to find it.

3

Be Organized, Establish Routines, and <u>Try your best not to Procrastinate</u>

1. Know what your teacher's expectations are.
2. Be prepared with the necessary materials (textbook, paper, pencil, etc.) and maintain an organized notebook and locker.
3. Write down and keep track of when your assignments are due through use of a calendar or daily planner. All assignments should be written exactly the same way as described by your teacher.
4. Set aside time each day for homework and/or studying. Even if you don't have written homework you can spend some time reviewing notes, the textbook, or preparing for a quiz/test.
5. Do your work in a neat, organized area without distractions such as TV, the telephone, or the computer.
6. Try your best not to procrastinate. If your teacher tells you a week in advance about a quiz/test or project, be sure to study or work on it a little each night. This will enable you to ask questions if difficulty or confusion arises and it usually results in better quiz/test scores and/or quality of work.

4

Take advantage of all resources

Students don't typically use all of the resources they have access to. These resources include teachers, guidance counselors, family members, friends, libraries, and the internet, among others. This wealth of knowledge and experience is usually easily accessible and can provide some of the most valuable information and assistance.

5

Be a Self-Advocate (*)

There are occasions where you may not understand what is being taught or you may have missed directions to an assignment. Whenever situations like these or other similar ones arise it is imperative that you ask for help. There is no reason to frustrate yourself (or others) because you are embarrassed to ask for clarification or additional assistance. All of your teachers, friends, and family members, among others would be more than happy to help you. Self-advocacy and knowing when to ask for help are essential for future success.

Mnemonics

Mnemonics are "memory aids that provide a systematic approach for organizing and remembering facts that have no apparent link or connection of their own" (Frender, 2004, p. 189).

Any "trick" or "device" used to help an individual learn or recall information would be considered a mnemonic. Since this is such a broad description, there are many possibilities that fall into this category. Personally speaking, I find mnemonics to be an easy and fun way to study and remember material, primarily because you can tailor your mnemonic so that it promotes your strengths as they relate to the multiple intelligences and learning style(s). I have provided you with some of the most popular mnemonic strategies used by students, but please understand that there are many more.

Strategy - Acronyms

Description – Acronyms are <u>words or abbreviations</u> that are created when you let the first letter of each word in a list or sentence represent the first letter of the words/list you wish to remember.

Example(s) – In math you may have learned the acronym **PEMDAS**. **PEMDAS** helps you remember the order of operations (**P**arentheses→**E**xponents→**M**ultiplication→**D**ivision→**A**ddition→**S**ubtraction). An additional acronym that you may be familiar with from science is **Roy G. Biv**. **Roy G. Biv** helps you remember the order of colors in the spectrum (**R**ed—**O**range—**Y**ellow—**G**reen—**B**lue—**I**ndigo—**V**iolet).

Strategy - Stories

Description – Devising stories gives you an opportunity to creatively apply the concepts you learn in school in a way that is meaningful and easy to remember.

Example(s) – Since stories may typically be at least a few paragraphs long, it is not practical to provide an example here, but understand that the possibilities when incorporating stories are as endless as your creativity.

Strategy - **Acrostics**

Description – Acrostics are similar to acronyms except they are <u>sentences or phrases</u> (usually silly) created when you let the first letter of each word in a list or sentence represent the first letter of the words/list you wish to remember.

Example(s) – For those of you who are actively involved with band/music a popular acrostic used to help remember musical scales is <u>E</u>very <u>G</u>ood <u>B</u>oy <u>D</u>eserves <u>F</u>udge (E—G—B—D—F). Another popular acrostic that you may have been exposed to when learning about the classification system of living things is <u>K</u>ing <u>P</u>hillip <u>C</u>ame <u>O</u>ver <u>F</u>or <u>G</u>ood <u>S</u>oup which helps you remember **Kingdom-Phylum-Class-Order-Family –Genus-Species**.

Strategy - **Chunking**

Description – Chunking describes the practice of grouping or categorizing a lot of information together, primarily when dealing with numbers. Our brains can hold on to seven (plus or minus two) "chunks" of information at one time. This is basically equivalent to between five and nine "chunks" of information. Therefore when too much information is present it becomes difficult to remember and these are situations where chunking should be utilized. It's easier to remember related information and bigger pieces of information.

Example(s) - Try to remember the numbers 9-7-3-5-3-8-1-3-5-6. This may be difficult for many people, however if you group the numbers together it is much more manageable. Now try to remember the numbers 973-538-1356. By organizing the ten numbers (or "chunks" of information) into three groups of numbers (or "chunks" of information) you should be more capable of retaining the information.

## Strategy - **Rhyme, Rhythm, Songs & Poems**

Description – Rhyme, Rhythm, Songs and poems can aid in memory by drawing on your auditory memory. Particularly when you use a familiar tune this strategy can be very rewarding, just think about how you learned the ABCs. You may not have realized it, but they are recited to the tune of "Twinkle Twinkle Little Star."

Example(s) – When learning about rules related to grammar and spelling (particularly about the placement of "i" and/or "e" you may have learned the saying "**'I' before 'e' except after 'c' Or when sounding like 'a' as in neighbor and weigh."**   Some former students created a song about Charles' Law that was aligned to the tune of the "Hokey Pokey." The song went like this, **"When the temp. goes up the particles jump about, when the temp. goes down they don't really move around, the pressure never changes it always stays the same, That is Charles' Law!"**

Show or Create Visual Images

When you create images, either literally or mentally it helps imprint concepts or information in your mind. Below are a few examples of how to utilize this memory technique, but be aware that the possibilities are limitless.

When learning about photosynthesis, creating a diagram such as this may be helpful.

Basic Photosynthesis
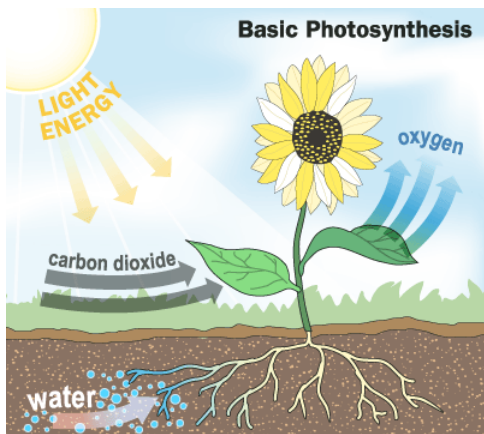
Visual taken from http://home.howstuffworks.com/irrigation1.htm

When learning about the civil war, the following mental images may be helpful.

Picture fighting at the Battle of Gettysburg on the large, open field. Picture the Union army and the Confederates dressed in their uniforms with colors representative of each side. Picture them marching at each other with both terror and aggression in their eyes. Picture the leaders on their horses with fearless expressions as they raise their swords for the charge.

When learning about the Bill of Rights a visual such as this can help you summarize and remember the 5 Freedoms (RAPPS)
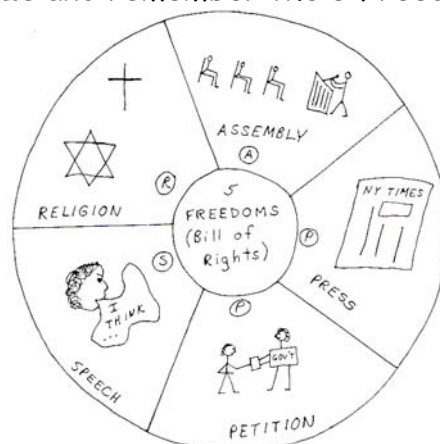
Organize Information

   **The amount of information you receive on a daily basis in school can be overwhelming and therefore it is important that you have adequate techniques for organizing it. There are many different methods of organizing information, but the most popular one is by writing down the information as you would when taking notes in class. Below you are provided with a few ways to arrange your notes.**

Graphic Organizers or "mind maps" provide a visual method of organizing ideas. There are numerous types and when creating them you have the opportunity to apply analytical skills as well as see the "big picture" and interrelatedness of information.

TIP
Inspiration & Kidspiration are computer programs that help create great graphic organizers
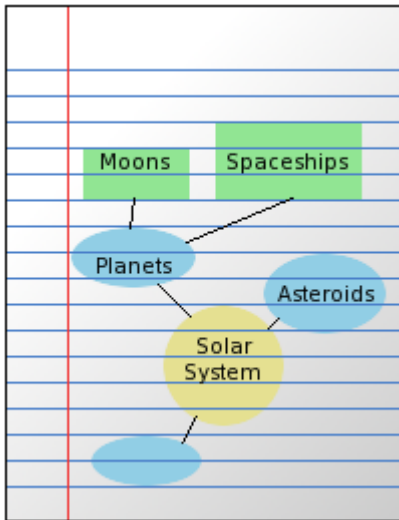
This is an example of a typical graphic organizer taken from http://en.wikibooks.org/wiki/Note_taking
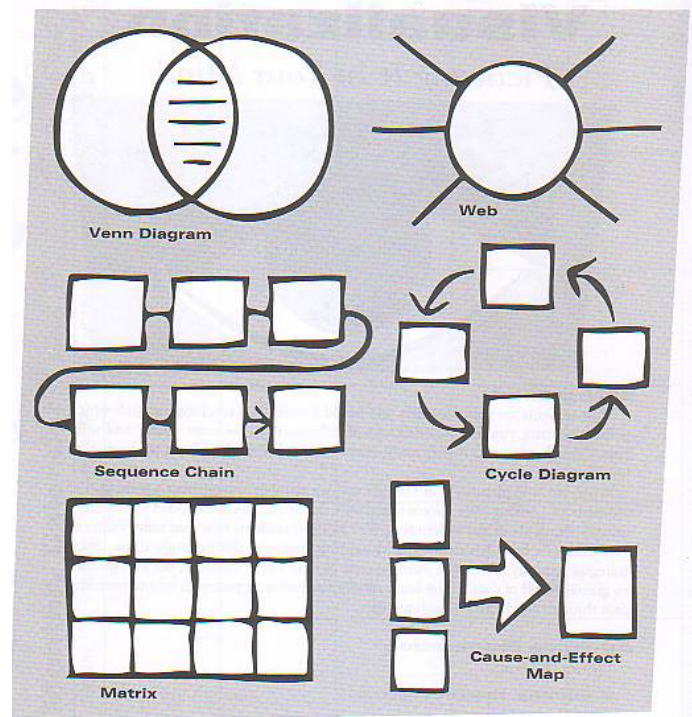
These are additional examples of possible graphic organizers taken from (1994) Judith Dodge, *The Study Skills Handbook*

It is important to recognize that even among these examples there are numerous variations so you have the opportunity to tailor the graphic organizer(s) to meet your personal needs and preferences.

Outline formats and the Cornell Method provide you with a very structured way of organizing your notes. In my experience these are the typical methods that students use for note-taking in class.

Name	Date
Subject	Page #
recall	notes column
column	
summary	

Cornell Method

"The Cornell Method shows the notes on one column of a page, and keywords on the other column. It allows quick retrieval of different subjects, and a fast and easy way to review the notes." In the recall column you can write down different categories (e.g. - parts of a cell), questions (e.g. - What are the parts of a cell?), vocabulary words (e.g. - nucleus), connections (e.g. - similar to an atomic nucleus), reminders (e.g. - look up chlorophyll), or even draw pictures. Having the space on the left is great for going back and jotting down important facts that you learned later on.

"This format is useful when you are taking notes on one subject at a time, or when you are trying to organize something into different categories." You would start with a general topic and indent to the right as you take note of more specific facts. This pattern continues until you have a new general topic, at which time you start at the left side of your page again. This style of note-taking works best with teachers who have very structured lectures.

I. Title
  1. Subject
    a. Item 1: Description
    b. Item 2: Description
    c. Item 3: ...
  2. Subject 2
II. Title 2
...

Outline Method

Most of the above descriptions and visuals were taken from
http://en.wikibooks.org/wiki/Note_taking

Incorporate Repetition/Recitation

The following description of repetition/recitation (with some modifications) has been taken from the website http://www.web-us.com/memory/memory_and_related_learning_prin.htm and it provides a clear and concise description. It simply describes the process of continually allowing yourself to think about the material you are learning.

The Principle of Recitation

"There is no principle that is more important or more effective than *repetition/recitation* for transferring material from the short-term memory to the long-term memory. For one thing, you are obviously in the process of **repeating** the information. Recitation can take several forms -- thinking about it, writing it out, or saying it out loud. "**Thinking about it**" is the *LEAST EFFECTIVE* because it gives us the least amount of reinforcement. **Writing and speaking** on the other hand, involve more electrical muscle movement messages to the brain which are known to increase mental response and recording. Vocal, "**out loud**" recitation is usually the *MOST EFFECTIVE* single technique for review because it employs more of the senses than any other review technique (utilizing both auditory and vocal senses.) If, for example, when reviewing your notes immediately after class the reviewing is done by vocal recitation, you will not only be consolidating (gathering) the new information but also strengthening the neural traces made to your brain.

 + **=** **Recitation**

What is recitation? Recitation is simply saying aloud the ideas that you want to **remember**. For example, after you have gathered your information in note form and have categorized and clustered your items, you recite them.

Here's how:

1) you cover your notes
2) recite aloud the covered material – like when you recite the pledge of allegiance (You should not attempt to recite the material word for word; rather your reciting should be in the words and manner that you would ordinarily use if you were explaining the material to a friend.)
3) expose the notes and check for accuracy.

*When you can *say* it, then you know it.*
(This is why it is best NOT to recite directly from the text.)"

Over-Learn

The following description of the principle of over-learning (with some modifications) has been taken from the website http://www.web-us.com/memory/memory_and_related_learning_prin.htm. Although many of you would probably not consider this practice because it may not seem sensible, it consists of continually reviewing the concepts to be learned even after you know them. This technique of over-learning has been shown to significantly increase an individual's ability to remember information.

The Principle of Over-Learning

"After you have recited a lesson long enough to say it perfectly, if you continue reciting it a few times more, you will over learn it. A well known psychologist and researcher, Ebbinghaus, has reported that each additional recitation (after you really know the material) engraves the mental trace deeper and deeper, thus establishing a base for long-term retention. A simple example of this that all of you should be able to relate to is when you sing your favorite song, over and over again. By continually singing it, the lyrics become "engrained" in your head. So remember, reciting the material even just one more time significantly increases retention. **Try to remember this and utilize the technique when you can.**"

Take Time to Reflect

This may not seem like a useful technique because of its simplicity, but just taking time to think about what you are learning can increase the chances of you remembering it. Sometimes reflection entails conversing with others about a topic, writing down big ideas or questions related to what you are learning (Connell, 2005), or just closing your eyes and thinking about what you have learned.

Utilize Reading Strategies

It is likely that you will have a significant amount of reading that ranges from class notes, textbooks, and the internet, among other sources as you learn new topics/facts in school. It is important that you employ reading strategies to assist in your comprehension of the material. There are quite a few reading techniques available. A popular one known as the SQ3R is described below.

USE SQ3R

SQ3R is a great way to get the most out of your reading. It works especially well with material you have to study, such as textbooks. To use SQ3R, follow these steps:
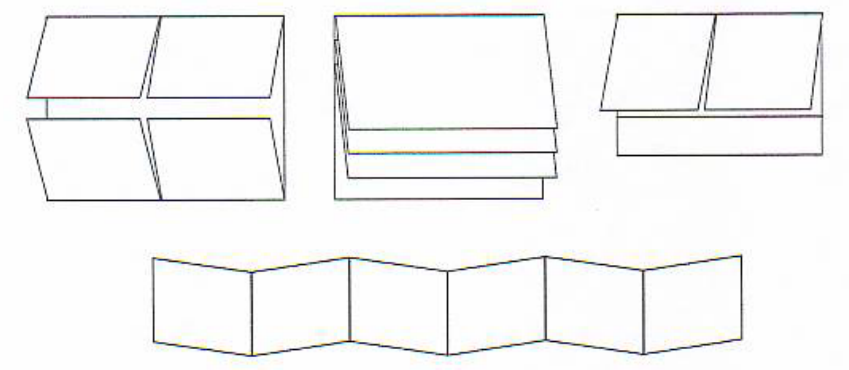
- **Survey**
  Preview the text by reading the title, headings, illustrations, and captions. Based on your survey, make predictions about the contents. Then skim the passage to get its overall meaning.
- **Question**
  As you survey and skim, ask questions about the material and what you find. Start by turning the title into a question. For example, look back at the passage "Keeping an Eye on the Weather." Turn this into the question "How do we keep an eye on the weather?" As you read, look for the answer to this question.
- **Read**
  Read the passage and continue making and revising predictions. Try to find the main idea by looking at the topic sentence and details in each paragraph.
- **Recite**
  After you finish reading, look back over the passage. Focus on the title, headings, and topic sentences. Summarize the material in your head, reducing what you read to a few sentences. Then recite or say your summary aloud.
- **Review**
  Review by looking back at your predictions. Were they on target? If so, find the details you used to make them. If not, figure out where and why you guessed incorrectly.

The above description of the SQ3R method was taken from (2002) Laurie Rozakis, *Super Study Skills*

Miscellaneous

The following are some additional study skills and techniques that you may already use or that you may want to consider.

Strategy	Description	Example
Translate	Put information into words that make sense to you. It is usually better to "translate" information into your own words. The extra processing helps you to remember.	Textbook definition: **_Photosynthesis_** is the metabolic process by which green plants use the energy of solar radiation to turn carbon dioxide and water into carbohydrates. Oxygen is released as a waste product. Everyday language: In **_photosynthesis_**, green plants use the sun to make sugar from water and carbon dioxide. Or Green plants use the sun to change water and carbon dioxide into sugar.
Make your own quiz or test	Creating your own quiz or tests allows you to anticipate the types of questions you will encounter. Believe it or not, you often create the same types of questions you see on the quiz/test.	Once/if the teacher tells you the format of the quiz/test, begin to generate questions based on the information the teacher has provided. For example, if the teacher informs you that a quiz will consist of sixteen questions (5 matching, 5 fill-in-the blank, 5 multiple choice, and 1 open response question) then you should make up questions that appear in those formats. You should then write out the answers to your questions as thoroughly as possible.

Use review/ index cards	Review/index cards provide you with an opportunity remember information by creating the cards and by reviewing them. there are many possibilities when using this strategy	Choose about 10 newly taught words. Have ready 3 index cards or slips of paper for each word (Total 30). Use each word in 3 different sentences, one to an index card/slip, but where the word should go, draw a line to represent a blank. Write the missing word at the bottom of the card/slip or on the back. (See sample below.)

Solids are more _____ than liquids. Dense	Liquids are more _____ than gases. Dense	A forest thick with trees is said to be _____. Dense

By creating multiple cards/slips for the same word you are incorporating repetition and allowing yourself to be exposed to a variety of possible questions.

Use foldables	"Foldables are like 3-D graphic organizers. They are created by folding and cutting paper to make a graphic organizer for displaying information. They often have flaps that can be lifted to reveal information. Be creative!"*	

*Description and visual example from
http://www.eemes.ccs.k12.nc.us/candler/PDF/foldables.pdf#search=%22foldables%20%22

Form study groups	Study groups help reinforce what you know, provide the opportunity to practice and review, enables you to learn information from others, allows you to teach others, and provide a fun	Step 1 – Identify 1-5 students in your class that closely match your expectations in grades, ability, and motivation and exchange phone numbers/e-mail addresses. Step 2 – Contact the students to arrange a meeting time and place. Step 3 – Before the first meeting, have each student choose an area to "specialize" in, covering specific portion of the material in detail combining text/class notes, handouts, lab reports, etc. Each student should construct a study sheet/graphic organizer of their special area to cover and make copies for everyone to be distributed at the

	atmosphere, among other things.	first meeting. Step 4 – At the first meeting set specific goals with a reasonable timeline, appoint a "task master," discuss/brainstorm all aspects of the material land test. Step 5 – Each member presents and reviews their study sheet/graphic organizer and quizzes the group members on the material. Step 6 – All group members discuss and question all topics and materials while making any necessary additions/corrections to the study sheets/graphic organizers. Step 7 – Test each other for "weak spots" covering all material to be tested. Step 8 – Make a plan of action for getting additional information or help if needed. Step 9 – Plan a second session if necessary (and if the first one was successful). Make sure everyone has a set of goals for the next meeting and that each member understands their particular assignment. It is important to also discuss any problems that occurred during the first session in order to minimize future problems. Finally, designate a time and place for the next session and get a commitment from everyone. *Description and example adapted from (2004) Gloria Frender, Learning to Learn*

Can you add another strategy to this table?

Conclusion

     Throughout this reference packet you have been provided with information on the multiple intelligences, learning styles, and various study skills and techniques. If you consider all of these things together you should be able to develop a nice "plan of attack" when it comes to learning, remembering, and testing. It is very important that you use the information gathered about your strengths as they relate to the multiple intelligences and your identified learning style(s) to choose study strategies that will be complimentary. This simply means that you should try to use strategies that would be most effective when considering your strengths and weaknesses (developing areas). For example, if a multiple intelligent strength of yours is the visual/spatial intelligence and your learning style is that of a visual person it would be extremely important for you to incorporate study strategies that dealt with pictures, graphics, or drawings.

     You should also understand that it is okay and practical to use many different study skills and techniques because it is not typical for students to have just one strength as it relates to the multiple intelligences or just one learning style. "Variety is the spice of life" and it will keep things interesting (or less boring) if you practice using different strategies. Also, you should realize that finding what works for you may take a while. When considering all of the possibilities it is not likely that the perfect strategy will be found and used the first time and that is why you cannot get too frustrated if you don't find immediate success. My goal is for you to use this year to experiment and find what works well for you (which may be totally different than what works for your best friend or anyone else).

     This reference packet is a work in progress so if you come across something that works well for you, please share it with me. That way I can add it so others can benefit. I hope that you find this helpful and be sure to ask questions if you need help. Also, feel free to borrow any of my resources used to create this packet; they can be checked out of my classroom at any time.

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