American River College
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SCIENCE SKILLS CENTER (SSC)

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READY, SET, GO!

The SSC Learning Process Workbook

Semester _____

Student Name _____ Appointment time _____

SSC Instructor _____

PART 1: SETTING UP SHOP

APPOINTMENT SIGN-OFF PAGE

Consult this page often to see what assignments you need to work on, and also to find out the page numbers for the different assignments.

ASSIGNMENTS

SSC SYLLABUS

CHAPTER 1 - LEARNING STYLES AND STRATEGIES

CHAPTER 2 - TIME MANAGEMENT

CHAPTER 3 - CLASS OVERVIEW

D2L DISCUSSION PROMPT: SETTING UP SHOP

SSC APPOINTMENT SIGN-OFF PAGE

Date Due	Assignments	Page	Date completed & SSC Instructor initials	
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SETTING UP SHOP ASSIGNMENTS

INTRODUCTION

Welcome to the Science Skills Center! We hope this will be a great learning journey for you, and thank you for signing up! We are here to help you be successful in your science class/es this semester.

The SSC (Biol 490) is a hybrid course that has both a face-to-face and an online component, using D2L. In order to satisfy the face-to-face requirements of the course, you will meet with one of the SSC instructors for one 30-minute weekly appointment that will continue for 6-8 consecutive weeks. In addition, you will be required to post weekly D2L discussions that will satisfy the online component of the course. This booklet and all other materials needed for this course are also available in electronic format (PDF/webpage) in D2L.

SETTING UP SHOP ASSIGNMENTS

This is the first of your SSC appointments, and today we will discuss several topics to help you get organized and plan on how you will manage your classes this semester, particularly your science class. The list below encompasses all the assignments that you need to complete for your next SSC appointment. You have ONE (1) week to finish this work.

1. *Syllabus:*
    a. *Read the syllabus carefully.*
    b. *Sign and have your science instructor/s sign the **BLUE** copy of the syllabus.*
    c. *Turn in the signed syllabus to your SSC instructor on your SECOND appointment.*
2. *Learning Styles and Preferences: Complete Learning Styles and Preferences Activities # 1, 2 and 3.*
3. *Time Management: **Study the "Time Management" chapter carefully and complete Time Management Activities #1 and 2.***
4. ***Class Overview: Study the "Class Overview" chapter** carefully and fill out the **Class Overview Activity.** Start keeping track of all the points you are earning in the course by using the Grade Tracking Worksheet provide. Extra copies are found in the Content area of D2L, in the Additional Resources section.*
5. ***D2L Discussion Prompt:** Post your thoughtful response to the "Setting up Shop" discussion prompt at least **ONE day (24 hours)** BEFORE your next appointment with your SSC instructor.*

SCIENCE SKILLS CENTER (SSC) SYLLABUS

This syllabus is a contract between you, the SSC, and the science instructor in the science course you are enrolled in this semester. Please study it carefully.

Enrollment Requirements:

1. All SSC work is self-study under instructional supervision. I realize I must be able to work independently to be successful in the SSC program. This is a half-unit hybrid class, **and I must complete all of the assignments given**, on paper and in D2L, or I understand that I will not receive credit for the class.

2. Familiarity with D2L and ability to use the internet to complete assignments is required to be successful in this course.

3. I may be required to bring a reading test from the Assessment Center to provide the instructor information during my intake conference.

4. I understand that I will be working on material that is appropriate for my specific science class, but that **this course does not provide content tutoring**. Instead, we will discuss different science learning and study strategies.

Student Learning Outcomes:

Upon successful completion of this course, students will be able to:

- apply the preview strategy to co-requisite course text chapters meaningfully
- construct paraphrases for concepts presented in co-requisite course textbooks or in their class notes
- prepare notes for their co-requisite class and review these notes based on the Student Learning Outcomes for the co-requisite course
- interpret various types of graphs and diagrams from their co-requisite course
- create concept maps in order to see relationships between ideas presented in their co-requisite course
- assess various test taking strategies appropriate for their co-requisite course
- demonstrate ability to read "actively" in their co-requisite course textbook

SSC Workbook:

5. Students will receive a new workbook each semester they enroll in the SSC program. My workbook is my responsibility; consequently, if I lose my folder, I understand that I may have to start over and print out the content as the workbook will not be replaced.

6. I know that from time to time either the SSC coordinator or my classroom instructor may want to communicate with me. I will watch the white board in the SSC classroom for any notes pertinent to all students in the SSC program. I understand that I need to check the email I provided to the SSC on a regular basis.

Appointments:

7. I must attend all the appointments required for my SSC class. I understand that failure to do so will result in my failing to complete the SSC program.

8. I understand that I have to come to my appointments prepared, with all the work assigned to me completed. Failure to complete my assignments may result in the appointment for the day being cancelled by my SSC instructor.

9. After **ONE unexcused absence or TWO excused absences**, I will lose my time space for that appointment, and will need to find a different appointment time to complete the program. **Sporadic attendance and lack of progress** will result in me being dropped from the program (Bio 490) entirely.

Units Awarded:

10. It takes approximately 15-20 hours to complete a 0.5 unit class. My SSC instructor will keep track and grade all the work I complete for the SSC, including a short summary of each session and a checklist of all assignments I have to complete for the following appointment. My progress will also be tracked in D2L.

11. Credit or No Credit grades will not be based on the amount of time I spend in the SSC. Instead, **I understand that credit will be awarded only on the mastery of the work assigned for each specific project, and completion of all required assignments, including those exclusively completed in D2L.**

Student Conduct:

12. If engaging in either cheating or plagiarism, I may be **suspended for two appointments from the SSC** and referred to the Dean of Student Services for disciplinary action. Furthermore, I will not be awarded credit for the class work I am currently working on, if suspended.

13. If I remove SSC materials without authorization from a SSC member, I will be suspended for two days from the SSC program and referred to the Dean of Student Services for disciplinary action. Furthermore, I will receive no credit for the project I am currently working on if suspended.

14. Engaging in disruptive, inappropriate, or disrespectful behavior towards SSC staff and students is **sufficient cause for administrative drop from the SSC**. I realize this, so I will conduct myself as a responsible college student while working on campus.

15. **I cannot talk on the phone or text in the SSC at any time as it is extremely disruptive** to the learning atmosphere the SSC promotes. Failure to comply may result in my appointment being cancelled for the day. If the behavior persists, more disciplinary action may be enforced.

16. I understand that the resources in the SSC (i.e., physical space, computers, printer, library, phone, etc) are **the property of the center and not for personal use**; therefore I will refrain from using them without permission and outside of my regularly scheduled appointment in the SSC.

17. I understand that it is my responsibility to provide the SSC my science instructor information so that she/he can be notified of my completion of the program. The SSC is not in charge of any extra credit opportunities that the science instructor may or may not offer.

Exam Analysis module:

18. One of the modules that I will be working on will require the completion of an exam analysis. I understand that **it is my responsibility to contact my instructor and get access to my exam** if my instructor chooses not to return the exam to me.

19. If my instructor does not return my exam, I understand that I have the option of doing the exam analysis with my instructor during office hours or in the SSC with the supervision of the SSC staff. If I choose this option, I acknowledge that it is my responsibility to check the exam out, and also check it back in with one of the staff members.

20. **I cannot remove the exam from the center,** and doing so is considered academic dishonesty and will have the appropriate consequences from both the SSC and my instructor. During my exam analysis, I cannot use any electronic device, and my phone needs to be put away.

Additional Activities:

21. At the end of the semester, I understand I will be asked to complete an online survey.

22. Tutors are a valuable component of the SSC staff. I will use their help whenever necessary. I also may be asked to consider being a tutor in future semester. If interested, I will talk to the SSC coordinator about it.

End of the semester deadlines:

23. Absolute deadline for submitted work is the last class day of the semester.

I have read and understand the SSC syllabus.

Student Name:	Science Instructor Name:	Science Instructor Name:
Student Signature:	Science Instructor Signature:	Science Instructor Signature:
Date:	SSC Instructor Initials:	

CHAPTER 1

LEARNING STYLES AND PREFERENCES

LEARNING STYLES ACTIVITY #1

The following is an informal quick exercise to help you figure out what learning methods you use to remember things.

Circle all the choices that apply to you. You will be given a key to check your answer.

Note: This is just a fun activity, and it is not a validated authentic test!!!

While concentrating quietly on an enjoyable task, which of the following activities would you find **SERIOUSLY DISTRACTING**?

a. Little kids running around the room (not screaming, just running around).
b. Being able to see the TV out of the corner of your eye.
c. Hearing the sounds from a TV you can't see.
d. Two people talking nearby about something you'd like to talk about.
e. A beginning musician practicing an instrument – badly.
f. The room cluttered and disorganized with piles of paper about to fall over.
g. Someone is counting items nearby.
h. The story you are reading seems to not follow any pattern; some details of the story seem contradictory.
i. Colorful pictures in the magazine/book you are reading distract your attention from the story.
j. When you are deeply involved in reading, someone quietly asks you a question.
k. When you are deeply involved in reading, a person is talking on the phone nearby.

In general, which of the following do you find **DISTRACTING or REALLY ANNOYING**?

l. Discussing a subject you don't know and don't care much about.
m. Putting together a new toy with no instructions on how to do it.
n. Thinking of a great idea and not being able to tell anyone about it.
o. Someone "backseat driving" while you try to put something in order.
p. Solving a problem, only to find out that lots of people have already solved it.
q. Having to work alone on a problem for several hours.
r. The story you are reading doesn't get to the main point until the end**.**
s. The story you are reading goes on and on before you get any details.

Courtesy of M. Buechner, PhD., Sacramento City College

LEARNING STYLES AND PREFERENCES REFERENCE CHART AND ANSWER KEY

Sensory Preferences		
a.	Kinesthetic	Prefer to learn through movement, doing things: • Study by using objects and motions • Taking notes helps – you are doing something
b.	Visual	Prefer to learn by looking at illustrations, graphs, drawings: • Study the figures in the book or make a flowchart • Use color and sketches in your notes • Use the CD/website that comes with the text
c.	Auditory	Learn best by listening to the information being presented: • Study by listening to tapes, play music while studying • Take notes using a tape recorder if you are permitted to • Go to study groups or tutors to listen
d.	Verbal	Learn best by talking out the information: • Study by describing and explaining (talk even if alone) • Sub-vocalize while note-taking • Find a tutor who will talk through the material
Learning talents or "intelligences" Note: There are more types of talents/intelligences than the ones described here		
e.	Rhythmic	A talent for learning rhythm, poetry, dance: • Study by making up rhymes, songs, etc. Moving rhythmically while studying may help. • Playing instrumental music while studying may help.
f.	Spatial	A talent for understanding size, shape, space, arrangement: • Study by moving and organizing objects. Lab classes may work well for you. • Use spatial imagery to describe ideas (i.e. graphic organizers)
g.	Quantitative	A talent for working with numbers, counting, sorting, etc.: • Study by using numbers to describe work. Tables, charts, and graphs may be helpful Organize your notes in a rational order
h.	Systems	A talent for learning how parts of a system or process work together • Study by making flow charts. Outlines may be good study tools. • Sketching out processes or systems (words or pictures) may help.
i.	Aesthetic	A talent for understanding or producing art, music, design, color: • Study by using the "art" that you most enjoy and understand. Take notes in several colors. • Study graphics & illustrations in your book. • Use your intuitive sense of how things fit together.
Personal Interaction Preferences		
j.	Interpersonal	Talking and working together with other people: • Study in groups, teaching others.

		• Ask questions in class, go to office hours. • Discuss your notes with others.
k.	Intrapersonal	Working in a quiet setting where you can think and study alone: • Study by solving problems in a quiet place • Sit in class and take notes quietly • Go online to read more about the subject
Classroom Interaction Preferences		
l.	Avoidant	Need to build confidence, engagement and/or interest. • Study by trying accessible materials first.
m.	Dependent	Seek out structure from teacher, class materials. • Study by completing all required work, taking good notes, etc.
n.	Participant	Engaged and interested in problem solving and interpersonal interactions. • Study by discussion, analysis, and synthesis of authentic problems.
o.	Independent	Engaged with the material, but not by interpersonal interactions. • Study alone, focusing on self-paced work and independent projects.
p.	Competitive	Engaged with material and challenge of competition • Study in groups if you can be the leader, work on most challenging problems.
q.	Collaborative	Engaged by interpersonal interactions first and material second. • Study in groups, work on group projects.
Information Processing Styles		
r.	Global learner	"Why does that work?" • Like to have the big picture first • Study by getting main idea then adding detail • Pay attention to section headings in the book
s.	Analytical learner	"How does that work?" • Need to have the details before the big picture. • Work on one section of the material at a time, until it makes sense. • Take careful notes that include details.

LEARNING STYLES ACTIVITY #2: QUESTIONNAIRE

DIRECTIONS: Each item presents two choices. **Circle the alternative that best describes you**. In cases where neither choice suits you, select the one that is closer to your preference in the current science class you are taking **CIRCLE the letter of your choice**, count the a's and the b's and enter the totals for each part in the chart at the end of the questionnaire.

Part One: Auditory vs. Visual

1. I would prefer to follow a set of:
   a. oral directions
   b. written directions
2. I would prefer to:
   a. attend a lecture given by a famous psychologist
   b. read an article written by the psychologist
3. When I am introduced to someone, it is easier for me to remember the person's:
   a. Name
   b. Face
4. I find it easier to learn new information using:
   a. language (words)
   b. images (pictures)
5. I prefer classes in which the instructor:
   a. lectures and answers questions
   b. uses films and videos
6. To follow current events, I would prefer to:
   a. listen to the news on the radio
   b. read the paper
7. To learn how to operate a fax machine, I would prefer to:
   a. listen to a friend's explanation
   b. watch a demonstration

Part Two: Applied vs. Conceptual

8. I would prefer to:
   a. work with facts and details
   b. construct theories and ideas
9. I would prefer a job involving:
   a. following specific instructions
   b. reading, writing, analyzing
10. I prefer to:
    a. solve math problems using a formula
    b. discover why the formula works
11. I would prefer to write a term paper explaining:
    a. how a process works
    b. a theory
12. I prefer tasks that require me to:
    a. follow careful, detailed instructions
    b. use reasoning and critical analysis
13. For a criminal justice course, I would prefer to:
    a. discover how and when a law can be used
    b. learn how and why it became law
14. To learn more about the operation of a high-speed computer printer, I would prefer to:
    a. work with several types of printers
    b. understand the principles on which they operate

Part Three: Spatial vs. Verbal

15. To solve a math problem, I would prefer to:
    a. draw or visualize the problem
    b. study a sample problem and use it as a model
16. To best remember something, I:
    a. create a mental picture
    b. write it down

17. Assembling a bicycle from a diagram would be:
    a. easy
    b. challenging

18. I prefer classes in which I:
    a. handle equipment or work with models
    b. participate in a class discussion
19. To understand and remember how a machine works, I would:
    a. draw a diagram
    b. write notes
20. I enjoy:
    a. drawing or working with my hands
    b. speaking, writing, listening
21. If I were trying to locate an office on an unfamiliar campus, I prefer:
    a. a map
    b. written directions

Part Four: Social vs. Independent

22. For a grade in a biology lab, prefer to:
    a. work with a partner
    b. work alone
23. When faced with a difficult personal problem, I prefer to:
    a. discuss it with others
    b. resolve it myself
24. Many instructors could improve their classes by:
    a. Including more discussion and group activities
    b. Allowing students to work on their own more frequently
25. When listening to a lecturer or speaker, I respond more to the:
    a. person presenting the ideas
    b. ideas themselves
26. When on a team project, I prefer to:
    a. work with several team members
    b. divide the tasks and complete those assigned to me
27. I prefer to shop and do errands:
    a. with friends
    b. by myself
28. A job in a busy office is:
    a. more appealing than working alone
    b. less appealing than working alone

Part Five: Creative vs. Pragmatic

29. To make decisions, I rely on:
    a. my experiences and gut feelings
    b. facts and objective data
30. To complete a task, I:
    a. can use whatever is available to get the job done
    b. must have everything I need at hand
31. I prefer to express my ideas and feelings through:
    a. music, songs, or poetry
    b. direct, concise language
32. I prefer instructors who:
    a. allow students to be guided by their own interest
    b. make their expectations clear and explicit
33. I tend to:
    a. challenge and question what I hear and read
    b. accept what I hear and read
34. I prefer:
    a. essay exams
    b. objective exams
35. In completing an assignment, I prefer to:
    a. figure out my own approach
    b. be told exactly what to do

Results

To score your questionnaire, record the total number of a's you selected and the total number of b's selected for each part of the questionnaire. Record your totals in the scoring grid provided below.

Scoring Grid

Part	**Total # of CHOICE "a"**	**Total # of CHOICE "b"**
ONE	_____ Auditory	_____ Visual
TWO	_____ Applied	_____ Conceptual
THREE	_____ Spatial	_____ Verbal (Non-spatial)
FOUR	_____ Social	_____ Independent
FIVE	_____ Creative	_____ Pragmatic

Circle the higher score for each part of the questionnaire. The word next to the score indicates a strength of your learning style. The next section explains how to interpret your scores.

Interpreting Your Scores

Each of the five parts of the questionnaire identifies **one aspect of your learning style**.

Part One: Auditory (listening) or Visual (seeing)

Auditory: you tend to learn more easily by hearing rather than reading.

Visual: you tend to learn more easily by reading, studying pictures, reading diagrams, etc.

Part Two: Applied or Conceptual

Applied: you prefer tasks that involve real objects and situations that are practical and may occur in real life.

Conceptual: you prefer to work with language and ideas. You do not need practical applications for understanding.

Part Three: Spatial or Verbal (Non-Spatial)

Spatial: you are able to visualize or mentally see how things work or how they are positioned in space. Strengths may include drawing, assembling, or repairing things.

Non-Spatial: these learners lack skills in positioning things in space. You rely on verbal or language skills.

Part Four: Social or Independent

Social: you prefer to work with others, both classmates and instructors, closely and directly. You are people oriented and enjoy personal interaction.

Independent: you prefer to work and study alone. You are self-directed or self-motivated and often goal oriented.

Part Five: Creative or Pragmatic

Creative: you are imaginative or innovative and prefer to learn through discovery or experimentation. You are comfortable with taking risks and following hunches.

Pragmatic: you are practical, logical, and systematic. You seek order and are comfortable in following rules.

****If you disagree with any part of the Learning Style Questionnaire, go with your own instincts, rather than these results. This is simply a quick assessment of your learning preferences.*

REF: Academic Reading: Kathleen T. McWhorter

LEARNING STYLE ACTIVITY #3:

1. Complete **ONE of the following three (3) online Learning Style Assessments**.
    a. A Learning Style Survey for College
    http://www.metamath.com/multiple/multiple_choice_questions.html
    b. Multiple Intelligences Test
    http://www.bgfl.org/bgfl/custom/resources_ftp/client_ftp/ks3/ict/multiple_int/index.htm
    c. The VARK Questionnaire
    http://www.vark-learn.com/english/page.asp?p=questionnaire
2. Print out the results page, and bring it to your next appointment.

NOTE: Links to the resources above are provided in the Content page of D2L.

CHAPTER 2

TIME MANAGEMENT

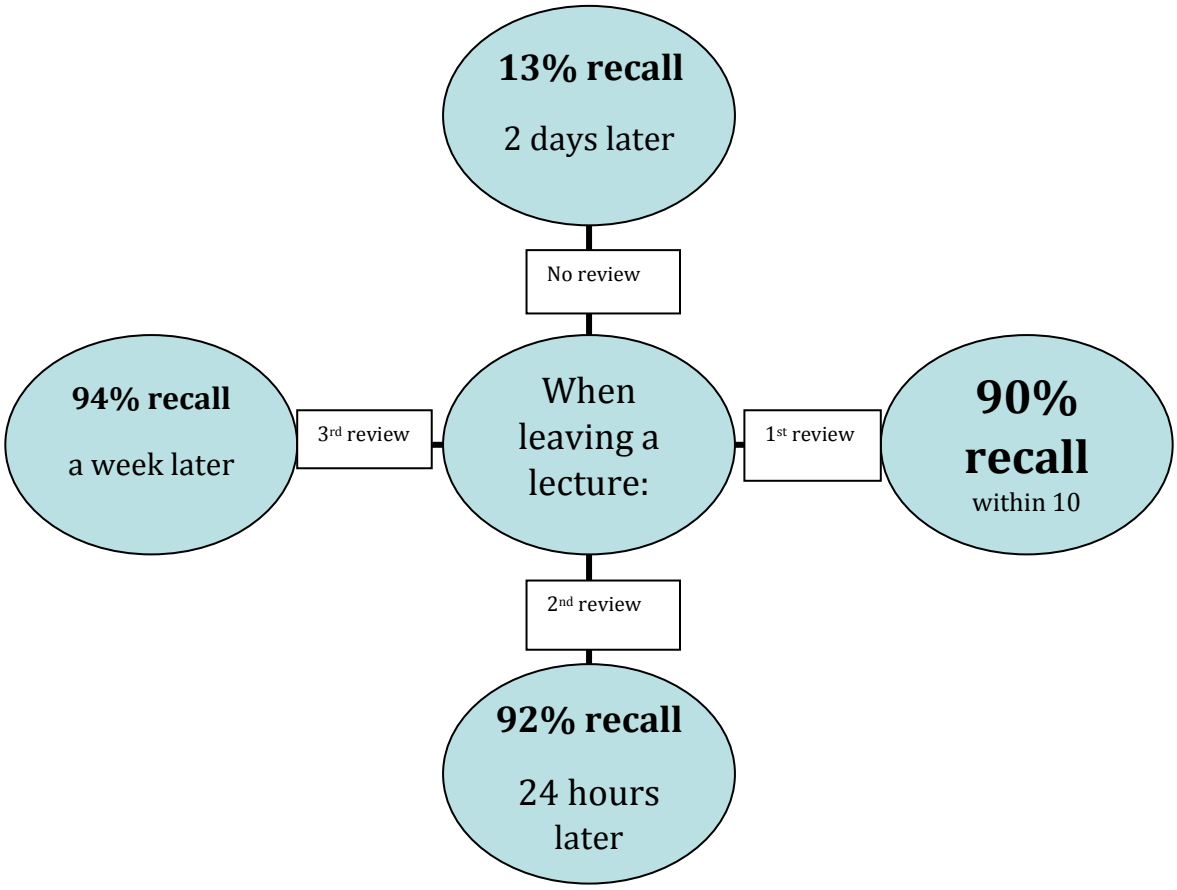
TIME MANAGEMENT ACTIVITY #1: WEEKLY SCHEDULE

1. Read the information on the next couple of pages, and then fill out the provided **Weekly Schedule**.
2. Start by filling out your fixed activities. Include your classes, work schedule, family time, meals, other standing appointments (book clubs, church, etc.), commuting, exercise, and TV shows that you regularly watch.
3. Put in the **hours you will study for your academic classes**: 2-3 hours/week/unit
4. Evaluate your schedule. What can you change to make it more balanced? Do you have enough study time? Do you sleep enough? Are there any "open" times for unexpected changes?

Tips for managing your time better:

- Many effective schedulers **plan their days at a regular time**: 5-10 minutes in the morning or before going to bed.
- Don't schedule exceedingly long study sessions. Few people can study effectively for more than two or three hours without a substantial break.
- Allow **larger blocks of time for learning new material, grasping concepts, drafting a theme**, etc. Divide these larger blocks of time into definite subparts the length of your attention span (20 minutes? 30 minutes?).
- As you work on each subpart, jot down the time you expect to finish. When you're through, **reward yourself with a brief break**- move around, talk to a friend, drink water, eat a snack…whatever works for you.
- Use **short periods of time (15-45 minutes) to review**. It's most effective to spend a few minutes reviewing immediately BEFORE a class involving discussion or immediately AFTER a class that is primarily lecture.
- Schedule **harder tasks when you are most alert** and can concentrate best.
- Do something daily- **don't let it all pile up**.
- Plan to **really learn the first time**. The rest of your study time should be spent reviewing through notes, and making up and answering potential test questions.
- **Don't try to allocate all of your time**. Know what needs to be done and how long it will take you. It's HOW you use your time that counts.

24-Hr Memory Rate: The Importance of Reviewing Notes



Quick breakdown of your time:

Week = 168 hrs	**Our Favorite Student's Week at a Glance**	**Your Week…(fill it out)**
Sleep	8 hrs/day = 56 hrs	
Food prep & eating	21 hrs	
School (12 units)	20 hrs	
Work, **study,** family, fun	71 hrs (10 of every 24)	

DRAFT Weekly Schedule **Semester _____**	**Study Time Formula** 2-3 hours/week/unit 12 units x 2 hours = 24 study hrs/week 12 units x 3 hours = 36 study hrs/week	**Legend** Sleep –ZZ Work – W Study – S In class – C Leisure – L Other - O

	S	M	T	W	T	F	S
6-7am							
7-8am							
8-9am							
9-10am							
10-11am							
11-12pm							
12-1pm							
1-2pm							
2-3pm							
3-4pm							
4-5pm							
5-6pm							
6-7pm							
7-8pm							
8-9pm							
9-10pm							
10-11pm							
11-12am							

REVISED Weekly Schedule **Semester _____**	**Study Time Formula** 2-3 hours/week/unit 12 units x 2 hours = 24 study hrs/week 12 units x 3 hours = 36 study hrs/week	**Legend** Sleep –ZZ Work – W Study – S In class – C Leisure – L Other - O

	S	M	T	W	T	F	S
6-7am							
7-8am							
8-9am							
9-10am							
10-11am							
11-12pm							
12-1pm							
1-2pm							
2-3pm							
3-4pm							
4-5pm							
5-6pm							
6-7pm							
7-8pm							
8-9pm							
9-10pm							
10-11pm							
11-12am							

TIME MANAGEMENT ACTIVITY #2: ACADEMIC PLANNER

1. Pre-fill the provided **Academic Planner** sheets with the current months and days. Complete the calendar at least for the entire length of your SSC class, preferably for the entire semester.
2. Pull out the class schedules and/or syllabi from all the classes you are enrolled in this semester.
3. On your planner, write down **all the assignments due** on the appropriate day.
4. You may choose to fill out planner pages for the rest of the semester ahead of time so that you can see all your school commitments easily. Extra planner copies are found in the center.

Academic Planner **Semester _____**

Sun	Mon	Tue	Wed	Thu	Fri	Sat

Academic Planner **Semester _____**

Sun	Mon	Tue	Wed	Thu	Fri	Sat

CHAPTER 3

CLASS OVERVIEW

CLASS OVERVIEW ACTIVITY

The following assignment is meant to help you answer any questions you may have about your class, and to give you a general framework for how the class is going to flow.

Please use the syllabus and/or meet with your instructor to fill out the following questions.

Name of the science course/s you are taking _____

Your expectations & planning:

1. Why are you taking this course (e.g. required, prerequisite, personal enrichment, etc)?

2. Based on your previous college experience and class/instructor research, how do you expect this course to be? (e.g., challenging, easy, time consuming, rewarding, etc.)

3. What are your expectations from this course? What results do you hope to achieve?

4. How much study time per week do you plan to dedicate to this course?

Instructor info:

5. What is your instructor's name?

6. When will you meet with your instructor for office hours?

7. What is the best way to contact your instructor?

   ☐ Phone_____ ☐ Email _____

8. What are some suggestions the instructor gives about how to be successful in the class? Which ones do you already do? Which ones sound like things you plan to do?

Grading:

9. How many total points are available in the class?

10. How many exams? When is your first exam?

11. Are there any other opportunities to earn points: homework, papers, quizzes, presentations, lab practicals, extra credit, etc. Please list important dates.

12. When is your first major exam or assignment due?

13. When is your final exam? Is it cumulative?

Student Learning Outcomes (SLOs) or Learning Objectives:

14. Do any of the SLOs sound familiar to you? If yes, which ones?

15. Did you take a class previously that helped you prepare for this one?

Resources for the class:

16. Textbook activity

List the titles of the chapters that are going to be covered on your next exam.

Which of the following resources does your book provide? *Please circle all that apply*:

introduction preface table of contents index glossary appendices website references media (CDs or DVD) other _____

Support programs available or offered (e.g. peer tutoring, MESA, open labs, SSC, office hours, etc):

Additional Information:

What other information in the syllabus did you find valuable (e.g. attendance policy, plagiarism policy, etc.)? Please list at least two.

GRADE TRACKING WORKSHEET

Knowing where you stand at any point during a class can be a great stress reliever. It helps you stay organized and focus on the material at hand. It also gives you a realistic view of your performance in the class and helps you set your goals for what you can achieve by the end of the class. Use this worksheet to help you figure out your current status in the class. If you have questions, do not hesitate to consult with your instructor.

DATE	**ASSIGNMENT**	**POINTS EARNED**		**POINTS POSSIBLE**
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	CURRENT AVERAGE		**%**	

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	CURRENT AVERAGE		**%**	

D2L DISCUSSION PROMPT: SETTING UP SHOP

In order to complete your first week assignments, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490 section of the current semester**. If you do not see this course in your D2L class list, please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Setting up Shop" discussion post**. Read the prompt at the top of the page (or you can read the prompt for this discussion below) and then click Compose. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. Please note that your instructor will NOT see your answer until you click **Post**.

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer or want to use more editing features than available in D2L.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

SETTING UP SHOP DISCUSSION PROMPT

In order for your post to be graded, please make sure you give thoughtful answers to ALL of the questions below:

1. After you have completed the **Learning Styles and Preferences Assignments**, in a small paragraph, briefly summarize your learning styles and preferences.
2. Write a paragraph explaining the most important things you learned from completing the **Time Management Assignments**, and what seem to be the greatest challenges for you this semester.
3. After completing the **Class Overview Assignment**, describe the key points you discovered about your science class, and then based on all the activities you completed this week, make a list of **5-7 ideas** of how you plan to handle your science course this semester. (e.g., study plan, time schedule, resources to use, etc.)

PART 2: DIVE IN!

ASSIGNMENTS

WARM-UP!

CHAPTER 4 - PRE-READING TEXTBOOK CHAPTERS

DIVE IN!

Inside the Classroom

CHAPTER 5 - NOTE-TAKING METHODS

Outside the classroom

CHAPTER 6 - ANNOTATING

CHAPTER 7 - GRAPHICS READING

Put it all together

CHAPTER 8 - PARAPHRASING

CHAPTER 4

WARM-UP: PRE-READING ACTIVITIES

INTRODUCTION

What would happen if you did not engage in some type of warm-up or stretching exercise prior to an athletic event or even your own personal exercise program? The answer is quite simple- fatigue, injury to muscles, and after awhile, you would probably be too tired to continue the physical activity.

Pre-reading/ surveying is essentially the same thing. By providing a structure or framework for the reading task, it becomes more manageable. This helps prevent frustration, and it also reduces your tendency to quit, since you know what to expect. Therefore, take a few minutes to question and look over the parts of the text for the information you will read.

PRE-READING ASSIGNMENT

1. *Pre-Reading Activity #1: Pre-reading of a textbook chapter.*
    a. *Look at your syllabus or class schedule, and determine what NEW chapter you are going to discuss in class next.*
    b. *Complete the worksheet for Activity #1 on this NEW chapter.*
2. *If your instructor provides printed notes for the next class lecture or lab – in the form of power point slides or other typed notes – complete Pre-Reading Activity #2: Pre-reading of Chapter Lecture Notes, on the same new material you pre-read in Activity #1.*
3. *D2L Discussions Forum: post your thoughtful response to the "Warm-up: Pre-reading Activities" topic in the discussion forum at least a day BEFORE you meet with your SSC instructor.*

HAVE A READING PLAN!

1. Ask yourself the following questions:
    a. *What should I know* when I finish this chapter?
    b. What are the major concepts I should understand?
    c. What supporting information or details should I remember on a long-term basis?
    d. *What should I be able to do* when I finish the chapter?
    e. What background information is essential to perform the required task?
2. Look for the items you believe are important for success in this course. Why are these items important?
3. Read assignments before the topic is discussed in class. Reading ahead sets you up to better manage your time, and helps you be more efficient when gathering information.
4. Read the charts, graphs, and diagrams. Understanding the information presented in the graphics is one of the keys to doing well in your science classes.
5. Formulate questions from textbook headings, vocabulary, and diagrams.
6. Integrate lecture notes with readings. Does the information in the text complement or extend the lecture information?
7. Supplement your notes using the index of the text. For example, topics may not be addressed within the pages assigned. Check the index to see if the topic is addressed in another section of the text!

PRE-READING ACTIVITY #1:

Pre-reading of textbook chapter _____ Title _____

*Spend **10-15 minutes**, not more, filling this worksheet out with information from the next chapter that will be covered in your science course.*

1. The title of this chapter is : _____

2. Regarding this topic, I already know the following:

3. Read the summary and comprehension questions. List 2-5 major topics that will be discussed in this chapter.

4. List 2-5 major headings from this chapter:

5. List 2-5 minor headings from this chapter:

6. Give the title and page numbers of at least 2 major graphics (illustrations, charts, tables, pictures, etc.) from this chapter:

7. List 5 or more key terms found in this chapter. Try to guess their meaning without looking them up.

PRE-READING ACTIVITY #2:

Pre-reading of printed lecture notes for chapter ___ Title _____

*Spend **10-15 minutes**, not more, filling this worksheet out with information from the notes for the next chapter that will be covered in your science course.*

1. The title of this chapter is _____

2. Regarding this topic, I already know the following:

3. Looking at the main points, list 2-5 major topics that will be discussed in class.

4. Are there any graphic illustrations in the notes? If yes, write down the topics they illustrate.

5. List 5 or more key terms you found in the notes provided for this chapter. Try to guess their meaning without looking them up.

6. Based on the information your science instructor included on the printed notes, predict 2-5 major questions that you think will be on your next test:

D2L DISCUSSION PROMPT: PRE-READING ACTIVITIES

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Warm-Up: Pre-reading Activities" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Pre-reading Activities

Important: Please note that only prompts that address all the questions below will be graded.

Write a thoughtful reflection in which you respond to **all** of the following questions about the **Warm-up: Pre-reading Activities** you completed.

1. In what ways does pre-reading/previewing the material before lecture help you manage the information in your science course?
2. If you were to incorporate pre-reading in your study routine, when would you be able to do it?
3. The questions/comments/concerns I have regarding pre-reading in my science class are …..

CHAPTER 5

INSIDE THE CLASSROOM: NOTE-TAKING METHODS

INTRODUCTION

We all know the importance of taking notes in class. It is vital to your understanding of the material you are responsible to learn. The quality of your notes can be a good indicator of your mastery of the material. Notes from class are invaluable study resources and many instructors use them as their main source for exam construction. In this chapter, we introduce four different note-taking methods that work well in science classes. Please feel free to try them all in the future and choose the ones that best work for you in your classes.

NOTE-TAKING ASSIGNMENT

1. *Study the **Note-taking** chapter carefully:*
    - *Review the different kinds of note-taking methods described in this chapter.*
    - *Based on the structure of your science class and with the help of your SSC instructor, **decide on the best note-taking method** to try in your science course.*
    - *In class, take notes in the format agreed upon for the next two classes or until your next SSC appointment. Feel free to use the sample pages provided in this manual.*
    - *Complete the 3-step review process outlined by the **24-hour Memory Rate**.*
2. ***D2L Discussions Forum:** post your thoughtful response to the **"Note-taking"** topic at least a day BEFORE you meet with your SSC instructor.*

1. THE RAD NOTE-TAKING METHOD

This is a note-taking method that takes off from a method designed by Hans Bethe, a physicist at Cornell University. He was lamenting the fact that his science students seemed able to memorize the information in his classes, but that didn't mean they really understood it. In addition, he felt they were forgetting the information far too soon and that the accumulated knowledge he hoped they'd leave his classroom with was not evident when they went on to the next science class.

In order to change the way students studied and learned information, he designed a new note-taking method. A noted learning theorist, Walter Pauk, also of Cornell University, later expanded upon the method and we, in the RAD/SSC, have further modified the method. To take RAD notes, follow these steps:

1. Divide your note page with line down the paper, 1/3 of the way in and draw a line across the bottom about 2 inches from the bottom edge of the page. This bottom section is your "AH HA" space.

2. Take notes on the text, or in class, on the right 2/3 of the page, above the AH HA space.

3. When you're ready to review your notes (within 12 hours of reading or listening to the material) write the following in the left hand column:

    - Summary statements
    - Mnemonics
    - Sample test questions
    - Key terms

4. Think about the material on the page and make connections with the other material and information learned from this or other classes or with other information from work or home; make connections between what you've learned in class and what you know about and have experienced in the world. Write about those connections in the AH HA space.

5. When studying, fold the paper to the line, leaving only the key concepts showing, and try to remember the rest of your notes. This is a self-testing mechanism that greatly enhances your understanding of the material.

The keys to this note-taking method are in the left column and at the bottom of the page. If you can summarize something, if you can think of sample test questions, and if you can think of a mnemonic device to aid memory, you really understand the material. If you can fit information into a larger personal scheme, then it will have meaning for you and you will understand and remember it better.

SAMPLE RAD NOTES PAGE:

Date	**Title or Topic**
After class, annotate notes here:	**During class**, take notes here.
• Key concepts	These notes can be any variety, from outlines to paraphrases.
• Questions • Drawings	When studying, fold the paper back to line to cover up notes and leave only concepts and questions showing.
• Mnemonics	

AH HA Space

- Make connections between ideas
- Apply concepts to real life situations

PRACTICE RAD NOTES PAGE:

Date	**Title or Topic**

2. THE GRID METHOD

Students are often required to **compare and contrast topics**, or **to keep track of multiple topics**. An easy way to do this is to use grid note-taking. This method allows a student to **organize information by category** and **see similarities and differences** in how the categories apply to multiple topics side by side.

A grid is a combination of mapping and outlining, and thus works well for both pragmatic and creative learners. As with mapping and outlining, the idea behind creating a grid is to help you see the relationships between the information that you have acquired through reading the text and/or taking lecture notes.

Grids can be used in many different classes, and they work well in science classes on topics where you may need to know the differences between certain structures and details about each. For instance, biology classes may ask you to understand the classification system for plants and animals so that you can compare them, which means that you need to keep track of the kingdoms and the characteristics of each kingdom such as classes and species. In geology, you may use a grid to classify and identify the properties of different types of rocks and sediments.

To create a grid, draw a rectangle to take up most of your piece of paper. Break this large box into columns and rows based on the number of topics for each category.

This method helps you track discussion when you would normally be confused and lose out on relevant concepts. It reduces the amount of writing that would otherwise be necessary. It provides an easy to review mechanism for both memorizations of facts and the study of comparisons and relationships. One of the challenges in using this method is that it may be hard to learn how to use the system and when to use it.

EXAMPLE 1(ANATOMY & PHYSIOLOGY):

	Smooth	Cardiac	Skeletal
Characteristics	Uninucleate Involuntary No striations	Uninucleate Involuntary Striated	Multinucleate Voluntary Striated
Location	Along the digestive tract	Heart	Attached to bones
Function	Pushes fluids and solids along digestive tract & regulates diameters of small arteries	Pumps blood throughout the body	Moves body by pulling on bones.

EXAMPLE 2 (ZOOLOGY):

Sponge	Sea anemone	Both
Filter feeder	Carnivore	Heterotrophic
Cellular level	Tissue level	Lack cell walls
Lacks gut	Incomplete gut	Multicelular
Choanocytes (diagnostic cell)	Cnidocyte (diagnostic cell)	macroscopic
No symmetry	Radial symmetry	Colorful
Phylum porifera	Phulum chidaria	Plant-like appearance

GRID NOTE-TAKING METHOD PRACTICE #1

During your next lecture, use the table below to organize one topic/section presented in class.

GRID NOTE-TAKING METHOD PRACTICE #2

During your next lecture, use the table below to organize one topic/section presented in class.

3. THE OUTLINING METHOD

Dash or indented outlining is a **very useful note taking method in science classes**, especially in *physical sciences*. The outline format can be *used if the lecture is presented in outline organization*. **Use this format when there is enough time in the lecture to think about and make organizational decisions when they are needed**. This format works best when you are confident of your note-taking skills and can easily handle outlining regardless of the note-taking situation.

When you use this method of taking notes,

1. **Put the information that is most general at the left**, and then indent each more detailed and specific piece of information to the right.
2. The relationships between the parts are given through indenting.
3. You can use numbers, but you don't have to. As long as you indent, you can use dashes, dots, or no markings at all. Make it simple, and modify it to fit your needs.

Example:

Measuring the Size of Earthquakes

I. Intensity Scales - The Modified Mercalli Intensity Scale

   A. 1902 – Giuseppe Mercalli develops a relatively reliable intensity scale

   B. Still used today in its modified version

   C. Used as a standard for California building structures.

   D. Drawbacks: based on the effects of earthquakes, not only on the severity of the shaking but also other factors, such as population density, building design, and the nature of surface materials.

II. Magnitude Scales

   A. Richter Magnitude

      1. 1953, Charles Richter developed the first magnitude scale using seismic records to estimate the relative sizes of earthquakes.

      2. Based on the amplitude of the largest seismic wave recorded on a seismogram

   B. Other Magnitude Scales

   C. Moment Magnitude

THE OUTLINING NOTE-TAKING METHOD PRACTICE

During your next lecture, use the outline template below to organize one topic/section presented in class.

1. _____
    - A. _____
        1. _____
        2. _____
    - B. _____
        1. _____
        2. _____
        3. _____
    - C. _____
        1. _____
        2. _____
2. _____
    - A. _____
        1. _____
        2. _____
    - B. _____
        1. _____
        2. _____
        3. _____
    - C. _____
        1. _____
        2. _____

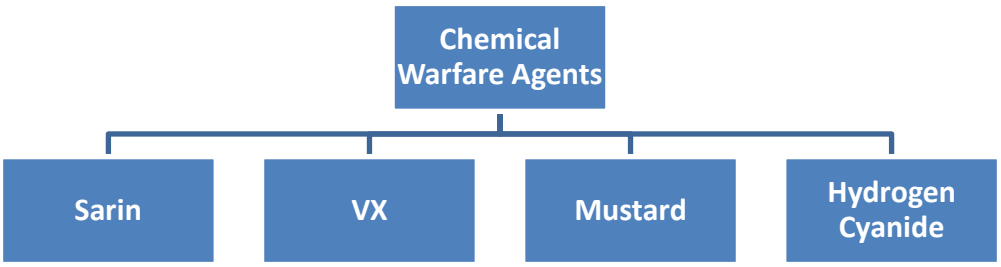
4. THE MAPPING METHOD

Mapping is a method that uses comprehension/concentration skills and applies them to note-taking. **Mapping is a graphic representation of the content of a lecture.** This method maximizes active participation, affords immediate knowledge and understanding, and emphasizes critical thinking.

This method helps you to visually track your lecture regardless of conditions. Little thinking is needed and relationships can be easily seen. It is also easy to edit your notes by adding numbers, marks, and color coding. Review will call for you to restructure thought processes which will force you to check understanding. Review by covering lines for memory drill and relationships. Main points can be written on flash or note cards and pieced together into a table or larger structure at a later date.

Example:

Hierarchy Map

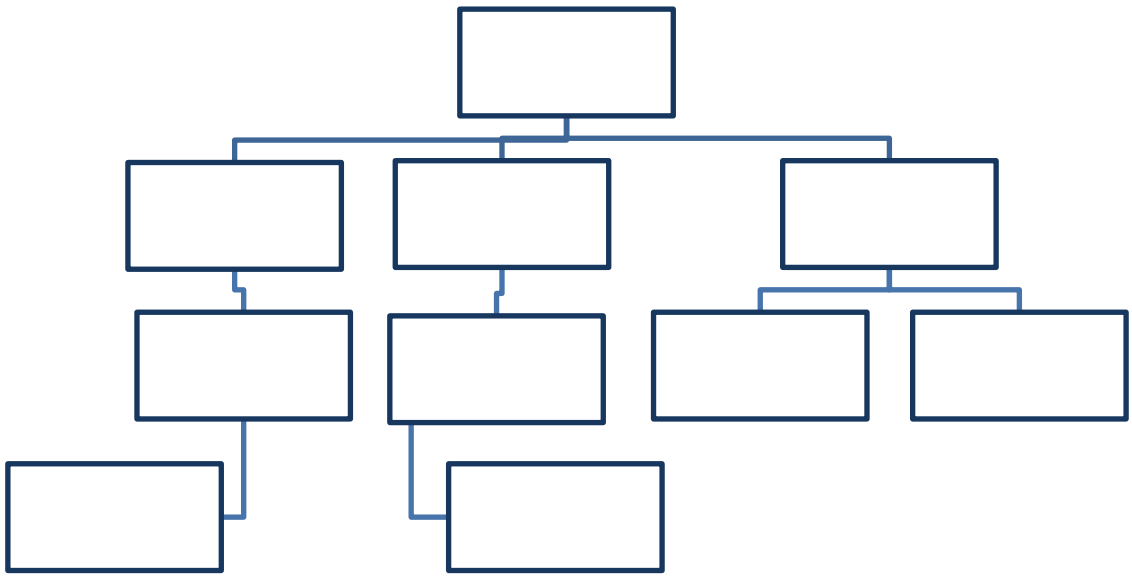


Spider Map

Adapted from http://sas.calpoly.edu/asc/ssl/notetaking.systems.html#charting

MAPPING NOTE-TAKING METHOD PRACTICE

During your next science class, use the template below to organize a section/topic presented by your instructor. Feel free to add more squares, and add connecting terms to the lines to help you understand relationships.



CLASSROOM NOTE-TAKING TIPS

Listen	Write	Review
Stay **focused on content**, not on instructor's style, dress, mannerisms, etc. If an instructor **repeats** a phrase or idea, or writes it on the board, it is important. Write it down. Stay **totally in the moment**. When an instructor asks a question and then follows up on it, this is important! Write it down. **Do not** sit next to friends, especially if they like to chat; they can be distracting. Relate the points to something you **already know**. Try to picture what the instructor is explaining. When you start to "get lost," and asking a question is inappropriate, circle or **somehow highlight area of concern**, leave some space in your notes for later, and move on. Avoid getting too warm or drowsy while taking notes. Listen for words that signal important information will follow. (E.g. 1st, 2nd, 3rd, in summary, noteworthy, etc.) A fact given immediately after an instructor refers to his/her notes is probably important.	Have **proper supplies** (pen, paper, pencil). Sit close to the instructor and board for fewer distractions. If the instructor says something you disagree with, jot it down and save it for later. **Prepare note pages prior to lecture** (e.g. Cornell or RAD format, outline format) Separate note pages into **sections by topic** Use only one side of paper. You can spread out notes on desk, table, bed, etc. Not all methods of note taking are the same. Put important concepts **in your own words**. This makes it easier to relate to the material. Make notes while reading a textbook using the same methods. **Do not doodle** – this will distract you. Have a "recall column;" you can jot down questions to be addressed later. **Use abbreviations** whenever possible – this gives you more time to write and listen. If the instructor provides notes, print and preview them ahead of time, add only notes that are not already printed, and follow along.	You can **critique content** now. Maybe things you disagree with could be the basis for a term/research paper. **Improve handwriting**. **Leave lots of space** between headings. If a lecture is based on a reading assignment, make sure you **read it before the lecture**. When reading a book, make sure **notes enhance the text, not duplicate it**. Major points are usually located in the beginning and ending sentence of every paragraph in the book. **24-Hour Memory Rate** **When leaving a lecture: 75% recall** 1st review, within 10 minutes: **90% recall** 2nd review, 24 hours later: **92% recall** 3rd review, a week later: **94% recall** IF YOU DO NOT REVIEW ANYTHING UNTIL 2 DAYS AFTER THE LECTURE **13% RECALL**!!!

Eight Ways to Abbreviate Your Notes

1. Symbols and graphics

= equal * important > greater than

≠ does not equal ** very important < less than

& and # number $ cost, money

w/ with w/o without vs versus, against

( ), { }, [ ] = information that belongs together

2. Abbreviations (don't worry about punctuation)

cf = compare eg = for example dept = department

NYC = New York City mx = maximum mn = minimum

3. Use only the first syllable of the word

pol = politics dem = democracy lib = liberal

4. Use the first syllable and only the first letter of the second

subj = subject cons = conservative

5. Eliminate the final letters; just use enough to recognize the abbreviation

assoc = association biol = biology rep = repetition

intro = introduction cncl = conclusion info= information

6. Omit vowels from the middle of words

bkgrd = background pprd = prepared estmt = estimate

gov = governor rdng = reading orgnsm = organism

7. Use apostrophes:

gov't = government am't = amount cont'd = continued

8. Form a plural of a symbol by adding "s":

co-ops = cooperatives libs = liberals /s = ratios

Adapted from: Pauk, W. (1984). How to study in college*. Boston: Houghton Miffin Company.*

D2L DISCUSSION PROMPT: NOTE-TAKING METHODS

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Inside the Classroom: Note-Taking Methods" discussion post**.

   If you do not see this discussion post listed, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click Compose. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click Save Draft to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Note-taking Methods

Important: Please note that only the posts that answer ALL of the questions below in a thoughtful manner will be graded.

1. In a few sentences, please describe why you think note-taking is or is not important, and summarize the way in which you have been taking notes in your science class.
2. After trying one or more of the note-taking sugested by the SSC, how do you feel about the new strategies and reviewing the notes after class?
3. The questions/comments/concerns I have regarding note-taking in my science class are…

CHAPTER 6

OUTSIDE THE CLASSROOM: ANNOTATING

INTRODUCTION

How many times have you read a few pages in your textbook and then realized you don't remember anything? It's very easy to let your mind wander when you are trying to read something that is often complicated and perhaps boring. This is where annotating is useful.

Annotating is simply defined as "the act of adding notes", and that is precisely what you are going to do—**add your own notes to your textbook**.

When you take the time to annotate while you read, two major things happen:

First, you force yourself to **pay more attention** to the material and read actively not passively! Second, you leave yourself easy reference points that make **review easier**. These reference points should also help you with your ulterior paraphrasing.

ANNOTATING ASSIGNMENT

1. *Study the **Annotating** chapter carefully:*
    - *Review the annotating suggestions in this chapter.*
    - ***Read and annotate** the "How to Mark a Book" article and bring it with you to your next appointment with an SSC instructor.*
    - *Using the **"Step by Step Guide to Annotating your Science Textbook,"** read and **annotate Chapter ____** in your textbook and **bring it in** to show it to your SSC tutor.*
2. ***D2L Discussions Forum:** post your thoughtful response to the **"Annotation"** topic at least a day BEFORE you meet with your SSC instructor*.

STEP BY STEP GUIDE TO ANNOTATING YOUR SCIENCE TEXTBOOK

WHEN YOU ANNOTATE:

1. **Make sure you have something appropriate to write with.** Some people like to use different color pens or pencils to help them differentiate between different ideas or levels of detail. Others prefer to annotate in simple erasable pencil. Whatever you choose, make sure you are comfortable with your choice and the annotations you make are visible. If you enjoy highlighting, we suggest you stay away from the highlighting at first, as it is easy to use it too much, and highlighting does not necessarily promote active reading and learning.

2. Review your class notes, study guide questions, or learning objectives, and **decide what information you need to read more about.**

3. Make a **plan of how much information you want to get through** in the time you have available. You may need to adjust this based on how difficult the information is and how fast you are reading. **Annotating usually means you read more slowly and carefully**; therefore, be prepared to take longer getting through the material.

4. **Do a quick scan of the pages you plan to get through:** headings, subheadings, key terms, beginnings of paragraphs, summary sentences. While scanning, formulate questions in your mind (e.g., What does this mean? How can I remember this? Is this a major idea or a detail?)

5. **Start annotating:** focus your attention on key points, definitions, parts of structures. Try to find answers to study guide questions or your own questions. Think about what kinds of questions your instructor might ask from this information. If you do not understand something, stop and reread. Try to rephrase the information in your own words and write it down in the margins or wherever there is space.

6. When you are done with a paragraph or a smaller section, go back and try to **summarize/paraphrase what you just read in a small phrase or sentence** on the sides/top/bottom of the page, or wherever you have room. Add an extra adhesive note if necessary.

TIPS FOR MARKING TEXTBOOKS

1. **Finish reading before marking.** Do not mark until you have finished reading a full paragraph or headed section and have paused to think about what you just read. The procedure will keep you from grabbing at everything that looks important at first glance.

2. **Be extremely selective.** Don't underline or jot down so many items that they overload your memory or cause you to try to think in several directions at once. Be stingy with your markings, but don't be so brief that you'll have to read through the page again when you review.

3. **Use your own words.** The jottings in the margins should be in your own words. Since your own words represent your own thinking they will later be powerful cues to the ideas on the page.

4. **Be brief.** Underline brief but meaningful phrases, rather than complete sentences. Make your marginal jottings short and to the point. They will make a sharper impression on your memory, and they will be easier to use when you recite and review.

5. **Be swift.** You don't have all day for marking. Read, go back for a mini-overview, and make your markings. Then attack the next portion of the chapter.

6. **Be neat.** Neatness takes conscious effort, not time. Later when you review, the neat marks will encourage you and save time, since the ideas will be easily and clearly perceived.

7. **Organize facts and ideas under categories.** Items within categories are far more easily memorized than random facts and ideas.

8. **Try cross-referencing.** For example, if you find an idea on page 64 that has a direct bearing on an idea back on page 28, draw a little arrow pointing upward and write "28" by it. Then turn back to page 28 and alongside the idea there, draw an arrow pointing downward and write "64" by it. In this way you'll tie the two ideas together, in your mind and in your reviewing.

9. **Be systematic.** There are many ways to mark the text: single and double underlines; the use of asterisks, circling, boxing for important items; and the use of top and bottom margins for longer notations. If some of these ideas appeal to you, work them into your marking system, one or two at a time. But use them consistently so you will remember what they mean at review time.

From: Pauk, W. (1984) How to study in college. *Boston: Houghton Mifflin Company.*

HOW TO MARK A BOOK

By Mortimer Adler

Writer, editor and educator Mortimer Adler was born in New York City in 1902. A high school drop out, Adler completed the undergraduate program at Columbia University in three years, but he did not graduate because he refused to take the mandatory swimming test. Adler is recognized for his editorial work on the Encyclopedia Britannica and for his leadership of the Great Books Program at the University of Chicago, where adults from all walks of like gathered twice a month to read and discuss the classics.

In the following essay, which first appeared in the Saturday Review of Literature in 1940, Adler offers a timeless lesson: He explains how to take full ownership of a book by marking it up, by making it "a part of yourself."

Food for thought:

> When you read a book that you must understand thoroughly and remember for a class or for your own purposes, what techniques do you use to help you understand what you are reading? What helps you to remember important parts of the book and improve your understanding of what the author is saying?

You know you have to read "between the lines" to get the most out of anything. I want to persuade you to do something equally important in the course of your reading. I want to persuade you to "write between the lines." Unless you do, you are not likely to do the most efficient kind of reading. I contend, quite bluntly, that marking up a book is not an act of mutilation, but of love.

You shouldn't mark up a book which isn't yours. Librarians (or your friends) who lend you books expect you to keep them clean, and you should. If you decide that I am right about the usefulness of marking books, you will have to buy them. Most of the world's great books are available today, in reprint editions, at less than a dollar.

There are two ways in which one can own a book. The first is the property right you establish by paying for it, just as you pay for clothes and furniture. But this act of purchase is only the prelude to possession. Full ownership comes only when you have made it a part of yourself, and the best way to make yourself a part of it is by writing in it. An illustration may make the point clear. You buy a beefsteak and transfer it from the butcher's icebox to your own. But you do own the beefsteak in the most important sense until you consume it and get it into your bloodstream. I am arguing that books too, must be absorbed in your bloodstream to do you any good.

Confusion about what it means to own a book leads people to a false reverence for paper, binding and type - a respect for the physical thing - the craft of the printer rather than the genius of the author. They forget that it is possible for a man to acquire the idea, to possess the beauty, which a great book contains, without staking his claim by pasting his bookplate inside the cover. Having a fine library doesn't prove that its owner has a mind enriched by books; it proves nothing more than that he, his father, or his wife, was rich enough to buy them.

There are three kinds of book owners. The first has all the standard sets and best sellers- unread, untouched. (This deluded individual owns woodpulp and ink, but not books.) The second has a great many books - a few of them read through, most of them dipped into, but all of them as clean and shiny as the day they were bought. (This person would probably like to make books his own, but is restrained by a false respect for their physical appearance.) The third has a few books or many - every one of them dog-eared and dilapidated, shaken and loosened by continual use, marked and scribbled in from front to back. (This man owns books.)

Is it false respect, you may ask, to preserve intact and unblemished a beautifully printed book, an elegantly bound edition? Of course not! I'd no more scribble all over a first edition of Paradise Lost than I'd give my baby a set of crayons and an original Rembrandt! I wouldn't mark up a painting or a statue. Its soul, so to speak, is inseparable from its body. And the beauty of a rare edition or of a richly manufactured volume is like that of a painting or a statue.

But the soul of a book can be separated from its body. A book is more like the score of a piece of music than it is like a painting. No great musician confuses a symphony with the printed sheets of music. Arturo Toscanini reveres Brahms, but Toscanini's score of C-minor Symphony is so thoroughly marked up that no one but the maestro himself can read it. The reason why a great conductor makes notations on his musical scores - marks them up again and again each time he returns to study them - is the reason why you should mark your books. If your respect for magnificent binding or typography gets in the way, buy yourself a cheap edition and pay respects to the author.

Why is marking up a book indispensable to reading? First, it keeps you awake. (And I don't mean merely conscious, I mean wide awake.) In the second place, reading, if it is active, is thinking, and thinking tends to express itself in words, spoken or written. The marked book is usually the thought-through book. Finally, writing helps you remember the thoughts you had, or the thoughts the author expressed. Let me develop these three points.

If reading is to accomplish anything more than passing time, it must be active. You can't let your eyes glide across the lines of a book and come up with an understanding of what you have read. Now an ordinary piece of light fiction, like say, Gone With the Wind, doesn't require the most active kind of reading. The books you read for pleasure can be read in a state of relaxation, and nothing is lost. But a great book, rich in ideas and beauty, a book that raises and tries to answer great fundamental questions, demands the most active reading of which you are capable. You don't absorb the ideas of John Dewey (an educational philosopher) the way you absorb the crooning of Mr. Vallee (a 1920's singer). You have to reach for them. That you cannot do while you are asleep.

If, when you've finished reading a book, the pages are filled with your notes, you know that you read actively. The most famous active reader of great books I know is President Hutchins of the University of Chicago. He also has the hardest schedule of business activities of any man I know. He invariably reads with a pencil, and sometimes, when he picks up a book and pencil in the evening, he finds himself, instead of making intelligent notes, drawing what he calls "caviar factories" on the margins. When that happens, he puts the book down. He knows he is too tired to read, and he's just wasting time.

But, you may ask, why is writing necessary? Well, the physical act of writing, with your own hand, brings words and sentences more sharply before your mind and preserves them better in your memory. To set down your reaction to important words and sentences you have read, and the

questions they have raised in your mind, is to preserve those reactions and sharpen those questions.

Even if you wrote on a scratch pad, and threw the paper away when you had finished writing, your grasp of the book would be surer. But you don't have to throw the paper away. The margins (top and bottom, as well as side), the end papers, the very space between the lines, are all available. They aren't sacred. And, best of all, your marks and notes become an integral part of the book and stay there forever. You can pick up the book the following week or year, and there are all your points of agreement, disagreement, doubt, and inquiry. It's like resuming an interrupted conversation with the advantage of being able to pick up exactly where you left off.

And that is exactly what reading a book should be: a conversation between you and the author. Presumably he knows more about the subject than you do; naturally, you'll have the proper humility as you approach him. But don't let anybody tell you that the reader is supposed to be solely on the receiving end. Understanding is a two-way operation; learning doesn't consist in being an empty receptacle. The learner has to question himself and question the teacher. He even has to argue with the teacher, once he understands what the teacher is saying. And marking a book is literally an expression of your differences, or agreements of opinion, with the author.

There are all kinds of devices for marking a book intelligently and fruitfully. Here's the way I do it:

1. Underlining: of major points, of important or forceful statements.
2. Vertical lines at the margin: to emphasize a statement already underlined.
3. Star, asterisk, or other doodad at the margin: to be used sparingly, to emphasize the ten or twenty most important statements in the book.
4. Numbers in the margin: To indicate the sequence of points the author makes in developing a single argument.
5. Numbers of other pages in the margin: to indicate where else in the book the author made points relevant to the point marked; to tie up the ideas in a book, which, though they may be separated by many pages, belong together.
6. Circling of key words or phrases.
7. Writing in the margin, or at the or bottom of the page, for the sake of: recording questions (and perhaps answers) which a passage raised in your mind; reducing a complicated discussion to a simple statement; recording the sequence of major points right through the book. I use the end papers at the back of the book to make a personal index of the author's points in the order of their appearance.

The front end papers are, to me, the most important. Some people reserve them for a fancy bookplate. I reserve them for fancy thinking. After I have finished reading the book and making my personal index on the back end papers, I turn to the front and try to outline the book, not page by page, or point by point (I've already done that at the back), but as an integrated structure, with a basic unity and an order of parts. This outline is, to me, the measure of my understanding of the work.

If you're a die-hard, anti-book-marker, you may object that the margins, the space between the lines, and the end papers don't give you room enough. All right. How about using a scratch pad slightly smaller than the page-size of the book - so that the edges of the sheets won't protrude? Make the index, outlines, and even your notes on the pad, and then insert these sheets permanently inside the front and back covers of the book.

Or, you may say that this business of marking books is going to slow up your reading. It probably will. That's one of the reasons for doing it. Most of us have been taken in by the notion that speed of reading is a measure of our intelligence. There is no such thing as the right speed for intelligent reading. Some things should be read quickly and effortlessly, and some should be read slowly and even laboriously. The sign of intelligence in reading is the ability to read different things differently according to their worth. In the case of good books, the point is not to see how many of them you can get through, but rather how many can get through you- how many you can make your own. A few friends are better than a thousand acquaintances. If this is your aim, as it should be, you will not be impatient if it takes more time and effort to read a great book than it does a newspaper.

You may have one final objection to marking books. You can't lend them to your friends because nobody else can read them without being distracted by your notes. Furthermore, you won't want to lend them because a marked copy is a kind of intellectual diary, and lending it is almost like giving your mind away.

If your friend wishes to read your Plutarch's Lives, Shakespeare, or The Federalist Papers, tell him gently but firmly to buy a copy. You will lend him your car or your coat - but your books are as much a part of you as your head or your heart.

D2L DISCUSSION PROMPT: ANNOTATING

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Outside the Classroom: Annotating" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Annotating

Important: Please note that only prompts that answer all the questions below will be graded.

After completing the annotating assignment:

1. Describe how annotating helped or didn't help you read more efficiently and understand the information in the text.
2. What are the challenges that would impede you from annotating in the future, and how can you overcome them?
3. The questions /comments/ concerns I have about annotating in my science textbook are …

CHAPTER 7

OUTSIDE THE CLASSROOM: GRAPHICS READING

INTRODUCTION

Many college students do not realize the importance of graphic support in written materials. They sometimes do not understand that they are designed to make the chapter easier to read and understand. This is especially true in science textbooks where the content is condensed and highly academic with a high percentage of scientific language and new vocabulary.

The primary purpose of graphics and visual aids are to summarize and condense information and actually save you time.

SOME TIPS FOR READING GRAPHICS:

- Read graphics as you would any other text.
- Think about the source of the information and how current it is.
- Look for the key idea and the relationships between the ideas represented in the graphic.

GRAPHICS ASSIGNMENT

1. *Study the "9 Steps for Reading Graphics" presented in this chapter.*
2. *Complete the Graphics Activity that follows.*
3. *Choose three (3) complicated graphics from your science class and apply the steps on these graphics.*
   - *Steps 1-8 can be done orally.*
   - *Step 9 (paraphrase of the graphic) needs to be done in writing, either in the margin of your textbook or on a separate piece of paper.*
   - *Be prepared to explain the three graphics you studied to your SSC instructor during your next appointment.*
   - Graphic 1 – page _____ Graphic 2 – page _____ Graphic 3 - page _____
4. *D2L Discussions Forum: post your response to the "Outside the Classroom: Graphics Reading" topic at least a day BEFORE you meet with your SSC instructor.*

GRAPHICS ACTIVITY

Study the graphic provided by your instructor and answer the following questions:

1. **What is the title of this graphic?**
   _____

2. **How is the graphic organized**?
   _____
   _____

3. Based on what you have seen, what is the graphic intended to show? What is **its purpose?**

   _____
   _____

4. **Now read the legend and explanatory notes.** Is there any information on how and when the data was gathered or how the graphic was created?

   _____
   _____

5. **What are the variables in this graphic?** Are there any comparisons being made? Are there any relationships being described?

   _____
   _____

6. **Can you identify trends or patterns?** What do you notice in this graphic? Any unusual statistics?

   _____
   _____

7. **Is there any information about scale, values, or units of measurement provided?**

   _____
   _____

8. **Now read the graphic along with the corresponding text.** Be sure to go to the graphic when the author tells you to. Refer to the paragraphs that discuss the graphics.

   _____
   _____

9 STEPS FOR READING GRAPHICS

1. **Read the title or caption**. The title will identify the subject and may suggest the relationship being described.

2. **Discover how the graphic is organized**. Be sure to read the column headings and labels.

3. **Analyze the purpose**. Based on what you have seen, predict what the graphic is intended to show.

4. **Read the legend and explanatory notes.** These may give you information on how and when the data was gathered or how the graphic was created.

5. **Identify the variables.** Decide what comparisons are being made or what relationship is being described.

6. **Study the data to identify trends or patterns.** Note changes, unusual statistics or unexplained variations.

7. **Determine the scale, values or units of measurement** (if applicable). For example, a map may be scaled so that one-inch on the map represents a mile.

8. **Read the graphic along with the corresponding text.** Be sure to go to the graphic when the author tells you to. Refer to the paragraphs that discuss the graphics, especially when reading diagrams.

9. **Paraphrase.** In the margin of your text, jot a note paraphrasing the trends or patterns the graphic emphasizes. Paraphrasing will cement the idea in your mind and will be essential for reviewing.

D2L DISCUSSION PROMPT: GRAPHICS READING

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Outside the Classroom: Graphics Reading" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Graphics Reading

Important: Please note that only prompts that answer **all of the questions below** will be graded.

1. Briefly explain how you have been reading the graphics/visual organizers in your science textbook before being introduced to the 9-step method.
2. Why is it important to study the graphics in your science textbook? How did you feel about applying the 9 steps to your study of the graphics? Are you going to continue using this method in the future?
3. The questions /comments /concerns I have regarding studying graphics/visual organizers in my science course are…

CHAPTER 8

PUT IT ALL TOGETHER: PARAPHRASING

INTRODUCTION

Paraphrasing is restating information in your own words while staying true to the meaning and intent of the textbook chapter. This skill can be challenging because if you are having problems understanding the textbook material, writing the information in your own words will be difficult. Paraphrasing is **not** copying sentences word for word, which does not ensure your understanding of the information; however, it does ensure plagiarism. (This means you should NOT use another person's words without giving them credit.)

The more you practice this skill, the easier it will become. Additionally, being able to put information into your own words assures that you understand it. ***Research has proven that paraphrasing is the most effective study method.***

PARAPHRASING ASSIGNMENT

1. *Study the **Paraphrasing** chapter carefully and complete the following activities:*
2. *Fill out the **Paraphrasing Practice** in the chapter.*
3. *Paraphrase **three (3) major concepts***
    a. ***Look** in the last chapter you read and annotated and choose 3 major concepts. You can use study guide questions, learning objectives, or review questions to help you choose the concepts.*
    b. *On a separate sheet of paper, paraphrase these **three concepts or objectives**. While the length for each concept will vary, you should have at least a paragraph (3-4 sentences). As a guideline, pretend that this concept is a short essay question on your next exam. Explain it in a way that would guarantee you full points on the exam.*
    c. *Review your paraphrased concepts and be prepared to teach them to your SSC instructor during your appointment.*
4. ***D2L Discussions Forum:** post your thoughtful response to the **"Paraphrasing"** topic at least a day BEFORE you meet with your SSC instructor.*

6 STEPS TO EFFECTIVE PARAPHRASING IN SCIENCE

1. Read and annotate the information you need to know from all sources available to you: textbook, class notes, other materials (e.g. websites, labs, etc.).

2. Review your annotations and outline some key concepts or learning objectives assigned by your instructor.

3. On a separate piece of paper, explain in writing everything you know about the topic, preferably without looking at the notes or book.

4. Check your rendition against the original to make sure that your version accurately expresses all the essential information in a new form.

5. Note any unique term or phraseology you have borrowed exactly from the sources used.

6. Review your paraphrase several times as a way to prepare for assessments on the concept. An effective method of review is speaking out loud, pretending that you will be asked to teach the particular concept to someone who does not know it.

A PARAPHRASE IS…

- your own rendition of essential information and ideas expressed by someone else, and presented in a new form.
- a more detailed restatement than a summary, which focuses concisely on a single main idea.
- practice for a short or long essay question on a test.
- a mirror into how well you really master the material.
- often much longer than the original passage because you have to describe the new or technical information

PARAPHRASING IS A VALUABLE SKILL BECAUSE…

- it is better than quoting information from an undistinguished passage.
- it helps you stay away from memorizing and strive towards comprehension of the material.
- you will remember paraphrased information a lot more easily than if you had memorized it.
- the mental process required for successful paraphrasing helps you grasp the full meaning of the original.

Adapted from Purdue University Website, at http://owl.english.purdue.edu/owl/resource/619/01/

PARAPHRASING ACTIVITY

Look at the following paraphrasing examples and decide if they are good or poor paraphrases of the original text.

1. Original: "Contrary to popular belief, exercise has never been demonstrated conclusively to lengthen life."

   Paraphrase: Contrary to popular thinking, exercise has never been demonstrated conclusively to lengthen life.

   (circle one) Good Paraphrase Poor Paraphrase

2. Original: "Will reputable scientists ever accept the claim that extrasensory perception and other paranormal powers really exist? It appears that many of them already have."

   Paraphrase: Many scientists today believe in the reality of ESP and other paranormal powers.

   (circle one) Good Paraphrase Poor Paraphrase

http://www.library.spscc.ctc.edu/electronicreserve/read9192/swanson/ParaphrasingtoAvoidPlagiarism.pdf

Create your own paraphrase based on the following reading:

"Because the intracellular concentration of potassium ions is relatively high potassium ions tend to diffuse out of the cell." (p. 204)

_____

_____

_____

facpub.stjohns.edu/~riogm.plagerism/examples%20of/paraphrasing.html

D2L DISCUSSION PROMPT: PARAPHRASING

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Put It All Together: Paraphrasing" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Paraphrasing

Important: Please note that only posts that answer ALL of the questions below in a thoughtful manner will be graded.

1. In what ways did paraphrasing help you master the material in your science class?
2. If you decided to paraphrase regularly, what challenges would you need to overcome? How would you need to change your current study practices to accommodate for this new skill?
3. The questions /comments /concerns I have regarding paraphrasing in my science class are…

PART 3: TAKE IT TO THE NEXT LEVEL!

ASSIGNMENTS

Chapters 9 & 10 - Graphic organizers

CHAPTER 9 - CONCEPT MAP

CHAPTER 10 - OUTLINE

Chapter 11 - Other study tools:

CUSTOMIZED GRAPHIC ORGANIZERS

FLASH CARDS

DRAWINGS

CORNELL /RAD NOTES

TAPED ORAL PARAPHRASING

SELF-TESTING QUESTIONS AND ANSWERS

CHAPTER 9

GRAPHIC ORGANIZERS: CONCEPT MAPPING

INTRODUCTION

Concept mapping is a visual way for you to turn the written information in your textbook into a combination of words and pictures to represent the main ideas and major supporting details. Often times, you will find that your schema (prior knowledge), creativity, and learning style for this technique will help you retain and recall textbook information more readily. Artistic talent is not a prerequisite to mapping, but adhering to accurately portraying the textbook information is. Please read about this technique on the next pages, examine the samples available in the Center, and if you have questions, jot them down and ask your instructor before you begin.

Mapping is an informal outlining technique that was devised for students to aid in organizing class material. You can improve your memory of what you have read by grouping and rearranging according to:

1. Topics
2. By the sequence or order in which topics take place
3. Alphabetically
4. Emphasis placed on material covered by the instructor
5. Other categories

For many people, getting a quick picture of the sequence and relative importance of a group of ideas by writing them in a map form is an effective form of outlining.

CONCEPT MAPPING ASSIGNMENT

1. *Study the **Concept Mapping** chapter carefully and complete the following: **Activities #1-4** in the chapter.*
2. *Using the planning you did for **Activity #4** and the steps presented in "How to Make a Concept Map," **create a detailed concept map of a chapter or a major topic currently discussed in your science course**.*
3. ***D2L Discussions Forum:** post your thoughtful response to the **"Concept Mapping"** topic at least a day BEFORE you meet with your SSC instructor.*

HOW TO MAKE A CONCEPT MAP:

1. Be sure you understand the meaning of the **seed terms**. Do not attempt to map the material until you understand it.
2. Start with the general terms (big ideas or concepts) and move out towards more specific terms (smaller ideas or examples of the 'big ideas").
3. Draw circles around the terms and draw lines connecting the circles.
4. Label all lines connecting the circles, using one or a few linking words. The **linking words** should define the relationship between the two concepts so that it reads as a valid statement or proposition.
5. Include arrow(s) to show the direction of the relationship.
6. Try to use a variety of descriptive words or phrases for your linking words.
7. Assign and label any lines you can think of which show connections between terms (these are called **cross-links**). Cross-links can often help you to see new, creative relationships in your knowledge.
8. Please add any related terms you can think of which will help make the concept map more complete or accurate. Try to add examples drawn from real life or from classroom experiences.

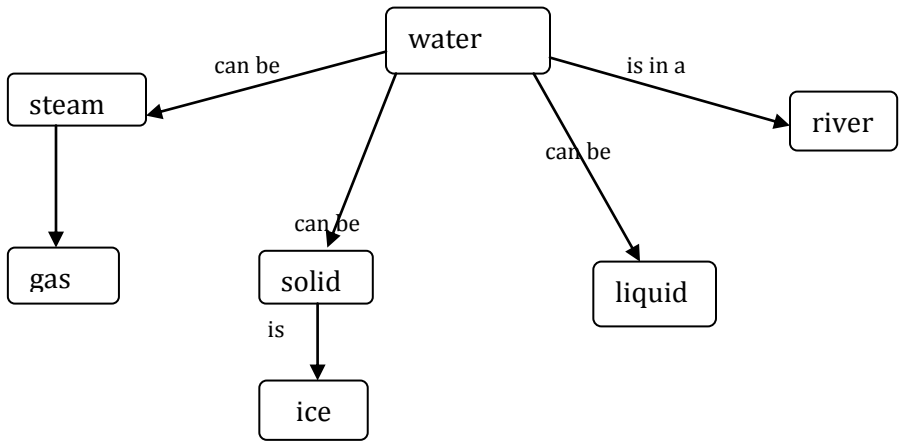
Rework the structure of your map that may include adding, subtracting, or changing concepts. You may need to do this reworking several times, and in fact, this process can go on indefinitely as you gain new knowledge from classroom experiences.

CONCEPT MAPPING ACTIVITY #1

Here is an example of a concept map drawn by a six-year-old student using the following **seed terms**: water, solid, liquid, gas, river, ice, steam.

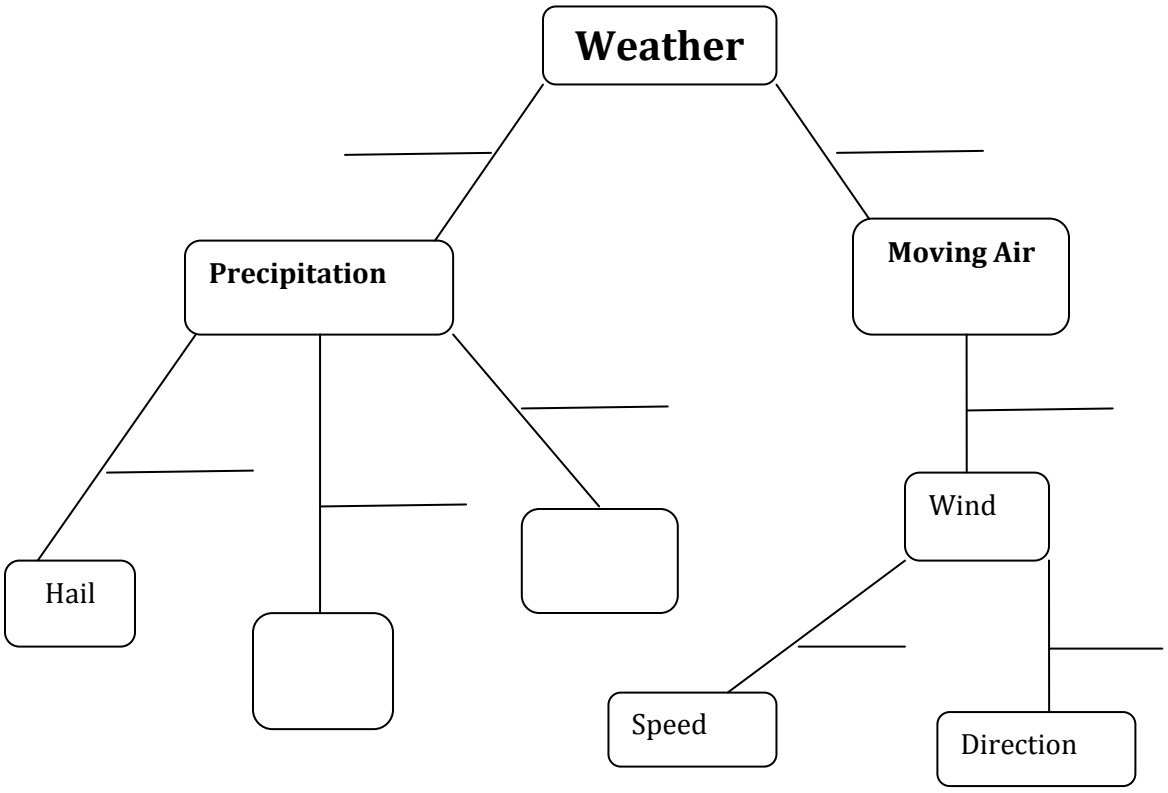
1. Incorporate the new seed term "vapor" into this concept map. Be sure to include descriptive **linking words.**

2. Add a **cross link**, connecting two seed terms by using arrows and linking words.



CONCEPT MAPPING ACTIVITY #2

Using the previous concept map as an example, identify the main topic and add the missing seed terms and appropriate connecting terms to this concept map.



Concept maps can be made in many different forms for the same set of concepts. There is no one way to draw a concept map. As your understanding of relationships between concept changes, so will your maps.

CONCEPT MAPPING ACTIVITY #3

Use the concept map below, fill out the following outline:

Main idea: _____

Major Supporting Detail: _____

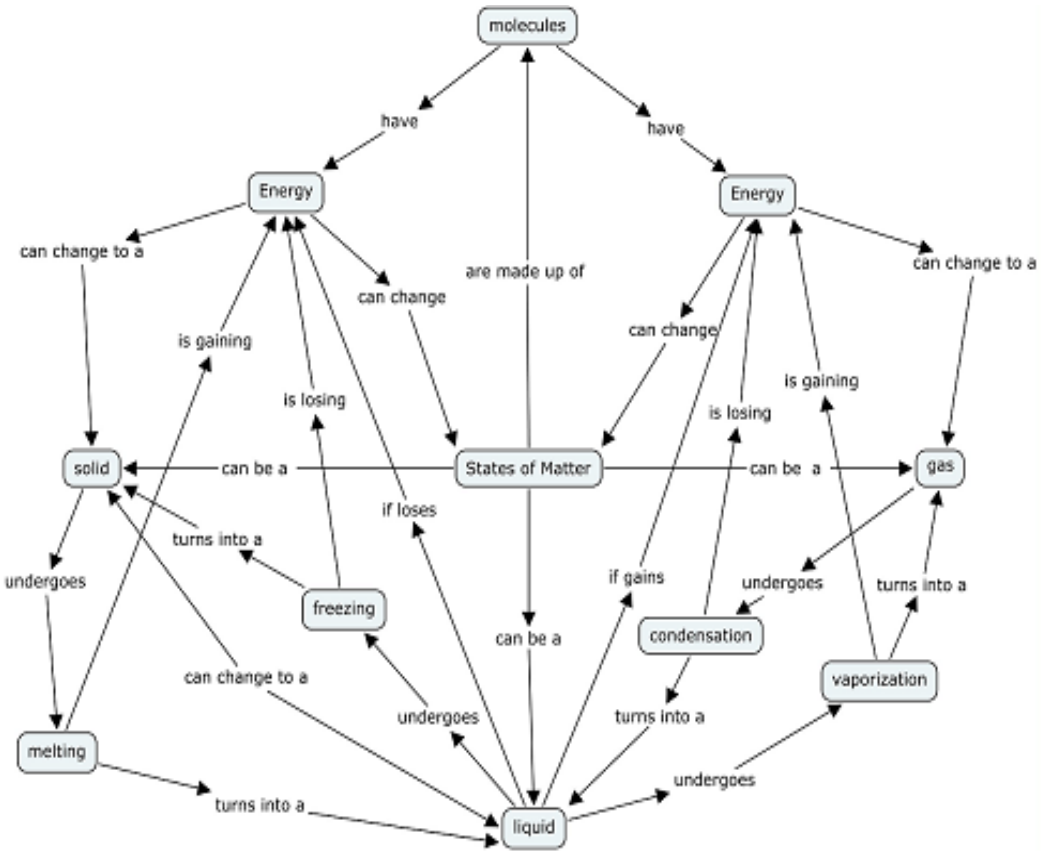
Minor Detail: _____

Major Supporting Detail: _____

Minor Detail: _____

Major Supporting Detail: _____

Minor Detail: _____

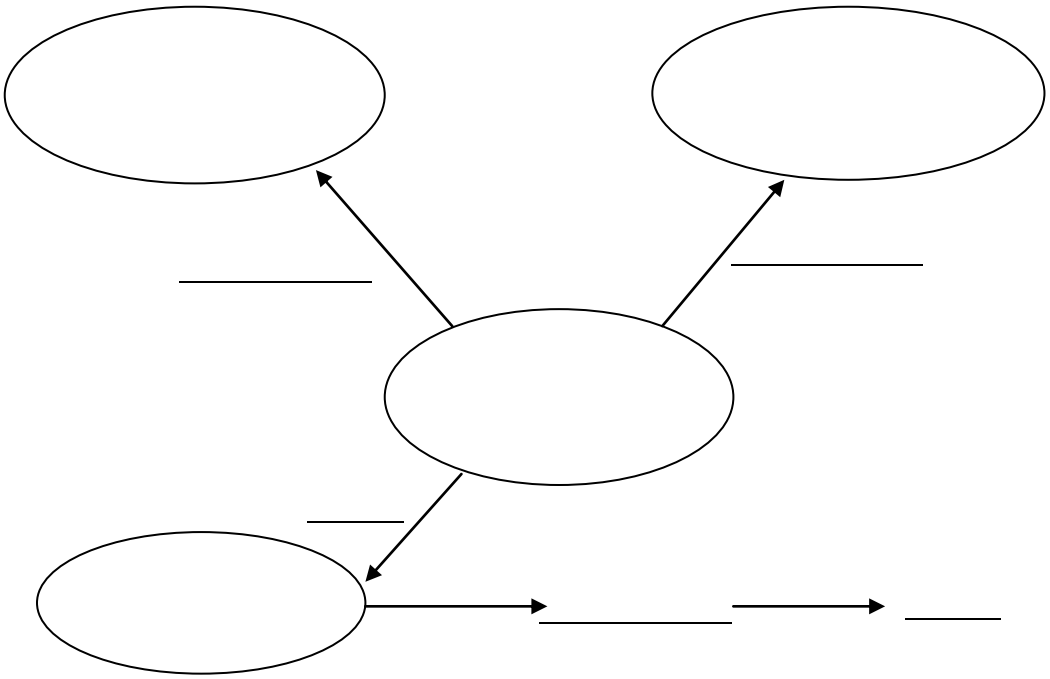


CONCEPT MAPPING ACTIVITY #4

Map Planning

1. Map topic _____
2. Make a list of several seed terms that you think are key to include in your map.
3. Use the template below to help you organize the layout of your map.
4. Make a rough draft of your map. Make it LARGE. Put it in motion mentally.
5. Make it unique! Do NOT copy a chart from notes or textbook!

NOTE: *This template is only a starting point.* Your concept map should be more detailed and much larger (a good size is about the size of a poster board).



There is no correct way to draw a concept map. The important feature is the connections that a student makes. The goal of making concept maps is to remember those connections, so simple drawings that are memorable are the best.

Remember, when you are mapping, you are in control!

D2L DISCUSSION PROMPT: CONCEPT MAPPING

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Graphic Organizers: Concept Mapping" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Concept Mapping

Important: Please note that only posts that address the questions below will be graded.

1. Explain how arranging the information in a visual manner can help you prepare for your science class.
2. Briefly summarize the concept mapping process that you performed in creating your map, and go over the benefits and/or the drawbacks of making frequent concept maps for your science class.
3. The questions /comments /concerns I have about using concept mapping as a study tool for my science class are…

CHAPTER 10

GRAPHIC ORGANIZERS: OUTLINING

INTRODUCTION

Reading a textbook or trying to study a new topic without trying to discover the author's general plan is like getting up in the morning and driving off on a two-month tour of the country without prior planning, without being sure that the car is in good mechanical shape, without extra clothing, without money, and without knowing the condition of the road ahead. You may often fail to get good meaning from what you read because you don't understand how the author put his ideas together, and, as a result, you miss the point. The authors of your textbooks plan what they are going to say and how they are going to say it. If you can see this plan, this organization, it will help you to read with better understanding. Outlining can help you to do this.

Although the formal structure is helpful, the concentration in outlining should be on understanding how ideas are put together.

Is it difficult to outline? It can be when you work with difficult-to-understand textbooks, but you can learn to outline more easily if you follow the steps below.

OUTLINING ASSIGNMENT

1. *Study the **Outlining** chapter carefully and complete the Outlining Activity.*
2. ***Outline the next topic/chapter** covered in class by following the steps below:*
    a. *Pre-read the chapter/topic you plan to outline.*
    b. *Study your notes from class, read and annotate the chapter in your textbook.*
    c. *Review the material and make a list of the MAJOR topics/ideas discussed in your chapter.*
    d. *Add in details under each major topic.*
    e. *Review your outline and make sure it covers enough information to help you master the topic/chapter.*
    f. *Bring and show your outline to your SSC instructor during your next appointment.*
3. ***D2L Discussions Forum:** post your thoughtful response to the **"Outlining"** topic at least a day BEFORE you meet with your SSC instructor.*

OUTLINING ACTIVITY

When you wish to outline a chapter in a textbook, do the following:

Try to discover the most important idea. You should write this as a title or a thesis statement. You must be able to discover main ideas in order to be an expert in outlining.
Look at the following list of words. Circle the item that includes all of the other items?

shirts coats articles of clothing shoes dresses hats.

Explain your answer: _____

Now read the following list. **Think about a term** which would include all of the following terms:

aunts sisters mothers wives grandmothers.

Now, **circle the term** that would most exactly include every one of the above:

females young girls people human beings.

Explain your answer: _____

Try to discover how the author develops or subdivides his main point. This will provide you with the major headings of your outline.

- Sometimes an author will do this chronologically. He will tell about the early years of a man's life, then the middle years, and then his later years. These are your major headings.
- Sometimes he will enumerate. These then are three reasons or four methods or five advantages. This again is a clue to your major headings.
- Sometimes he uses cause-effect relationships (as in the discussion of an experiment in a chemistry book).
- Sometimes he goes from general to specific or from specific to general or easy to difficult or known to unknown.
- Sometimes he uses comparison-contrast. Although this is not an all-inclusive list, these are the major ways in which authors develop their topics.

When you can discover these relationships, the difficulties of outlining melt before you and understanding becomes easy.

Try to discover the author's details. How does he develop his **major ideas**? Which ones does he give **most attention** to? These are ordinarily clues to what the author thinks is important or complicated and in need of more detailed explanation. Always try to connect these details to the major points which they explain or develop. It is very important not to allow the detail to become a fact itself but to connect it to some major point.

NOTATION IN OUTLINING

1. *The <u>size</u> of the indentation and the <u>notation</u> are determined by the importance of the idea.* The more important an idea is, the closer to the left you should place it. In order to follow a standard system for notation, you should assign a Roman numeral to these major ideas. In other words, the most important ideas are placed farthest to the left and are notated I, II, III, and so on. You should place the next most important ideas, the ones that explain or develop the main idea (the major details), to the right and below the major ideas, and you should notate them with capital letters (A, B, C, etc.). You should place the minor details, or lesser ideas that explain or develop the major details, to the right and below these major details and you should notate them with Arabic numbers (1, 2, 3). Most outlines need not go beyond this third level of ideas. If you must do so, however, as in very complicated or highly developed outlines, lesser ideas are placed below and to the right and are notated

    a.
        (1.)
            (a.)

    Read the following list: *aunts, sisters, females, mothers, wives.* Which term should be placed farthest to the left? What should its notation be? The term *females* is the major idea here in the sense that it includes the remaining terms. You should have placed it farthest to the left and you should have assigned the notation I to it. When outlined, it should look like this:

    I. Females
        a. Aunts
        b. Sisters
        c. Mothers
        d. Wives

2. *All ideas of the same importance should have <u>equal indentation</u>.* In an outline any stated idea is smaller than and part of, or a development of, any stated idea above it and to the left of it. It is equal to any idea that has the same rank of indentation (whether above or below it) and is a bigger idea than any idea stated to the right of it (whether above or below it)…

3. *A topic sentence should not be subdivided unless two or more points of equal value can be noted under the topic.* (Do not use a I without a II or an A without a B, for example).

OUTLINING FORMAT (SAMPLE)

I. First heading (Main Idea)
   A. First Supporting
      1. Detail
      2. Detail
   B. Second Supporting
      1. Detail
         a. Detail about detail
         b. Detail about detail
      2. Detail
      3. Detail
         a. Detail about detail
         b. Detail about detail
         c. Detail about detail
   C. Third Supporting
      1. Detail
      2. Detail
         a. Detail about detail
         b. Detail about detail

II. Second Heading (Main Idea)
   A. First Supporting
      1. Detail
         a. Detail about detail
         b. Detail about detail
         c. Detail about detail
      2. Detail
   B. Second Supporting

D2L DISCUSSION PROMPT: OUTLINING

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Graphic organizers: Outlining" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Outlining

Important: Please note that only prompts that address all of the questions below will be graded.

1. Explain why it is important to understand how the author and/or instructor organized the material in your textbook and/or notes.
2. What were the challenges you faced when creating your outline? In what ways did outlining help you prepare for your next test? Are you going to use this study tool in the future? Please explain your answer.
3. The questions /comments /concerns I have about using outlining as a study tool for my science course are…

CHAPTER 11

OTHER STUDY TOOLS

INTRODUCTION

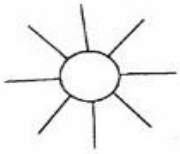
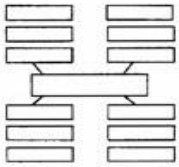
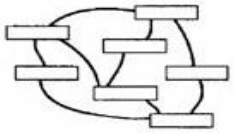
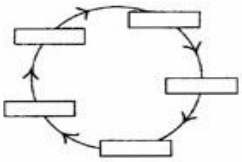
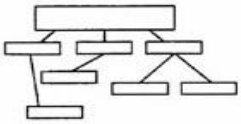
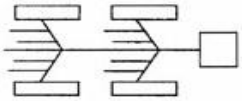
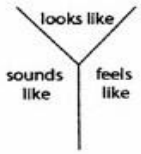
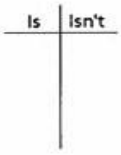
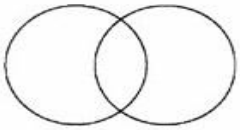
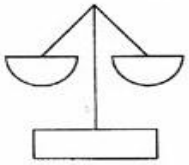
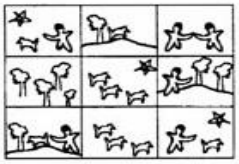
When reviewing course material, organizing it in an individual and unique way can be a great resource for you. It can really help you master the material in a deeper way, and it can give you the ability to apply the information you are learning in relevant circumstances. There are many ways besides concept mapping and outlining in which you can organize the information you are learning. Below are only some suggestions that you can try. Feel free to come up with your own way of manipulating the information in the current chapter you are learning or use the suggestions we give you. The goal is to create a FORMAL study tool, something that is comprehensive enough to cover the topic and incorporate a variety of sources in detail, as well as original to you. This study tool should then be your main source for the review of the specific topic you chose.

OTHER STUDY TOOLS ASSIGNMENT

1. *Study the formal study strategies explained in the Other Study Tools chapter and choose two that you think you can use for your science class.*
2. *Before your next appointment, create those two tools and bring them in and show them to your SSC instructor.*
3. ***D2L Discussions Forum:*** *post your thoughtful response to the* ***"Other Study Tools"*** *topic at least a day BEFORE you meet with your SSC instructor.*

CUSTOMIZED GRAPHIC ORGANIZERS

As you have seen with Concept Mapping and Outlining, organizing information in a visual format can be a beneficial way of retaining it. There are many other different ways to visually organize the information you are learning, depending on many variables, including your personal preference, the topics being studied, and the way the information is presented. Below are some examples of how you can manipulate information.

KEY PURPOSE OF THE ORGANISER	SAMPLE GRAPHIC ORGANISERS		
Recalling, grouping, classifying, summarising ideas	 Spider diagram	 Affinity/cluster web	 Concept map
Sequencing events, ordering ideas	 Cycle circle	 Flow chart	 Twister
Showing causal links (cause and effect)	 Futures wheel	 Bridge	 Fishbone
Deeper analysis—dissecting an idea into specific components and exploring different attributes	 Y chart	 T chart	 Venn diagram
Planning and decision making or reviewing	 Scales	 Comic strip	 ECG graph

FLASH CARDS

LEARNING FACTS WITH FLASH CARDS

1. Start with a stack of blank index cards. On one side of a card, write a question or name of a structure you need to memorize. On the back of the card, paraphrase the answer. Limit yourself to one fact per card. Prepare as many cards as you need.
2. To use the cards effectively, view the question and quiz yourself. Do you know the answer? Check the back of the card. If you answered correctly, set the card aside. If you were wrong, place the card on the back of your stack so that you will see it again.
3. Proceed through your stack of cards. Set aside cards you get right and continue through cards you get wrong until you have gotten all questions/answers correct.
4. Now shuffle the cards and repeat the process. Practice makes perfect, so if you get frustrated, set the cards aside and come back to them. Go through your cards every day.

MEMORIZING A LIST WITH FLASH CARDS

1. If you are memorizing an ordered list, try to guess the next card before you look at it. Continue through your list until you get a wrong answer.
2. With the cards in the same order, start from the beginning and go through the cards to see if you can get further.
3. For long lists, it may help to break the list up into manageable pieces, such as three smaller stacks of cards. Once you get the smaller stacks correct, put them together and see if you can recite the entire list.

http://chemistry.about.com/od/studyskills/qt/flashcards.htm

REWRITING NOTES

Rewriting and reorganizing your notes is another great way to review information.

This might seem like a waste of time at first. However, rewriting can be a very effective method for reinforcing what you've learned. The act of rewriting notes helps us clarify our understanding, especially when we try to incorporate additional information from other sources into the new "neat" notes.

You can simply jot down key points in bullet form, or tidy up any original notes. You can also use any of the note-taking methods we discussed in the Note-taking Methods chapter.

TAPED ORAL PARAPHRASING

For more auditory and verbal students, recording paraphrases of important concepts learned or answers to comprehensive study guide questions or learning objectives provided by the instructor or available in textbooks or other resources may be a valuable way of reviewing and organizing the information.

1. Start by making a list of topics/questions you want to talk about in your recording.
2. Prepare your recording device. Your computer or mobile devices may have software to allow for voice memos or other types of recording. Also, if you have a video camera, this may be a great way to use it. Make sure you have enough battery and memory space to record everything you plan to say.
3. Pull out your notes, textbook, and all needed materials and have them all open in front of you for consultation.
4. Start recording your explanations/paraphrases to the topics you prepared. Feel free to give yourself page references for illustrations or charts that may be relevant in a future review.
5. Depending on how many questions you want to answer, it may be a good idea to record each topic under a separate audio or video file. This will make it easier to find topics when you review.
6. Review by listening to your paraphrased recordings or share with classmates during study sessions.

QUESTIONS AND ANSWERS

Asking questions on the material you are learning is a crucial critical thinking skill that all college students would benefit from. Get in the habit of asking questions about everything you learn, both in class and outside. Even if you don't have a chance to get your questions answered in class, write them down and research them later. As you progress through the material, start filtering through your questions and make a list of the most important/challenging ones. Add to this list course learning objectives, study guide questions, textbook review questions, etc. Your goal is to have a comprehensive list of open ended questions to cover all the topics you need to know in a certain chapter or chunk of information.

Once you have this list, pretend that it is a take-home exam and you are required to provide short answers to each question. Proceed to answer these questions in your own words, consolidating information from all sources available to you. When you are done, you will have a very useful and comprehensive study tool to review from both individually and with a study group. In addition, you will be able to reduce the amount of information you don't understand because you will isolate it and then address it as opposed to letting it remain unclear in your mind.

D2L DISCUSSION PROMPT: OTHER STUDY TOOLS

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Other Study Tools" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Other Study Tools

1. In a brief paragraph, explain what tools have you used in the past to help you organize the information in your classes, especially in your science class.
2. Describe in a few sentences what tools you have tried from this chapter and how they worked for you. Which ones do you still want to try? Which ones will you continue using? Why?
3. The questions /comments /concerns I have about using a variety of study tools for my science course are…

PART 4: STRATEGIES FOR SUCCESS

ASSIGNMENTS

CHAPTER 12 - PROBLEM SOLVING STRATEGIES

CHAPTER 13 - TEST-TAKING STRATEGIES

CHAPTER 12

PROBLEM SOLVING STRATEGIES

INTRODUCTION

Developing the problem solving skills to deal with the variety of issues that arise in your path is an ongoing, sometimes challenging, process, and as a student, you are confronted with this on a daily basis. Being persistent and creative in problem solving are characteristics that employers often seek in new employees. In this chapter, you will be introduced to problem solving tactics and characteristics often needed in science classes. This chapter also asks you to look inwardly and identify your strengths and weaknesses in the area of problem solving, and then proceed to develop the skills necessary to perform well in the current class you are in.

PROBLEM SOLVING ASSIGNMENT

1. *Study "Table 1: Problem Solving Tactics" and "Table 2: Characteristics of Good Problem Solvers" table.*
2. *Complete the Problem Solving Worksheet on pages 4 & 5 of this chapter.*
3. *D2L Discussions Forum: post your thoughtful response to the "Problem Solving" topic at least a day BEFORE you meet with your SSC instructor.*

TABLE 1: PROBLEM SOLVING TACTICS

Tactics	Description	Example
CLARIFYING	Re-read the problem as if you were editing it; analyze givens, make unstated assumptions explicit, clarify goals.	A restatement of problem - its givens, assumptions and goals - in your own words.
VISUALIZING	Draw a figure and label givens. Close your eyes to form a mental picture and imagine the set-up.	A figure, diagram, model which should help you see relationships between givens and unknowns.
ANALOGY	Recall or use text to find a similar problem, method or technique.	A model to follow in solving your problem
SUBGOAL	Break problem into simpler problems.	Partial solutions leading to your goal
ALGEBRAIC	Introduce variables for unknown and write equations	Symbolic representation of problem
BRAINSTORMING	Think of every related formula or definition	A list of formulas, definitions, etc. to be used
QUESTIONING	Construct questions for the instructor. Indentify what you need to know to answer the question	A list of questions whose answers lead to a solution
IDENTIFYING	Identify concept in the book behind the problem	Once you know the concept, use other strategies to answer question
TEAM	Work with classmates	Discussion of ideas that can lead to broader understanding
TRIAL-ERROR	Hit and miss attempts. Try special cases.	Corrective feedback, better understanding. May lead to induction
INDUCTION	Try cases and look for patterns.	Generalizations and insights about problems
WORK BACKWARDS	Begin with an answer and try to figure out how it was obtained	The process for solving the problem
LOOK BACK	Check and verify your work. Is the solution reasonable?	Verification of solution
INCUBATE	If making no progress after 30 minutes, stop working on it and leave it for awhile.	An opportunity for insights to develop.
GO FOR HELP	Ask for hints or explanations	Obtaining necessary insights and strategies

Taken from How to Study Mathematics, Chemistry, Statics, Physics

by Jason L. Frand, Ph.D., 1979

TABLE 2: CHARACTERISTICS OF GOOD PROBLEM SOLVERS

	Characteristics	Common thought processes
INTELLECTUAL CURIOSITY	They show a strong desire tolearn and eagerly attempt new learning tasks	"I wonder how this works?" "I've never read this before, but it looks interesting."
INTELLECTUAL HONESTY	When they don't understand something, they admit to themselves and others	"I'm confused" "This isn't making any sense. I need more information to figure this out."
OBJECTIVITY	They focus their energy on the task at hand rather than their reactions to the task. They actively pursue a variety of strategies to deal with it	"This seems like a difficult problem, but let me look at it another way. First, I'll underline the givens."
INTELLECTUAL SKEPTICISM	They question the validity of what they are learning	"Is this measurement in molarity or malality? I'd better check."
OPEN-MINDEDNESS	They are willing to consider different ways of thinking. They read and listen without bias	"It looks like I'll have to take a math course after all, but maybe it will be useful."
USE OF PRIOR KNOWLEDGE	The apply prior knowledge and experience with academic tasks to new situations.	"This looks similar to the problem I worked yesterday. Maybe I can use the same approach to get started."
FLEXIBILITY	They recognize the value of trial and error, and attempt a variety of strategies to figure things out.	"I'm getting nowhere with this approach. I'll try something else."
PERSISTENCE	They stay with the difficult tasks and seek resources that might help.	"This chapter is more difficult than I thought. I'd better set aside more time."
DECISIVENESS	While studying and taking tests, they constantly make decisions. They judge when learning has not taken place and adjust their strategies accordingly.	"I'm not sure that I made the right choice picking B over C. I should think it through again…OK, that was the right answer. I'll go on now."
POSITIVE ATTITUDE	They believe that reasoning strategies are effective and exhibit this conviction through their behavior.	"I've worked through problems like this one before and I can do it again. I can figure it out if I use what I know."

Adapted in part from Education for Effective Thinking, 1960.

PROBLEM SOLVING ACTIVITY

PART 1: SCIENTIFIC INQUIRY ACTIVITY

An example of a situation where the problem solving tactics and skills would be helpful is the **scientific method**. The scientific method is used in many sciences as a way of observing, studying, and analyzing different phenomena and data. The four steps of this method are: (1) **observation,** that raises questions about a certain phenomenon and leads to the collection of important information; (2) **hypothesis,** developing a supposition based on the previously collected information; (3) **experiment**, in which the hypothesis is tested, paying attention to the variables involved; and, based on the results of the experiment, the (4) **conclusion** of whether the hypothesis should be accepted or rejected.

*Please look at the following example, and, using your problem solving skills, try to **come up with an experiment to accept or reject the hypothesis**.*

SCIENTIFIC INQUIRY: Does Spoiled Meat Produce Maggots?

Observation: Flies swarm around meat left open; maggots appear on meat.

Hypothesis: **Flies produce maggots; keeping the flies away from meat will prevent the appearance of maggots.**

Experiment:

_____

_____

Conclusion:

_____

_____

Source: Audesirk Teresa, Audesirk, Gerald, and Byers Bruce E., Biology, Life on Earth, Sixth Edition, Prentice Hall, 2002

PART 2: PROBLEM SOLVING IN YOUR SCIENCE CLASS

1. Using the information in Table 1 in this chapter, identify 3-5 problem solving tactics you use. Give specific examples for each. Explain why the other tactics are not used.

_____

_____

_____

2. Using the information in Table 2, identify 3-5 problem solving characteristics of good problem solvers you have. Give specific examples. Which characteristics you want to develop? How would you go about developing them?

_____

_____

_____

3. OPTIONAL: Develop a step-by-step problem solving method to apply to the problems/scenarios in your science class.

_____

_____

_____

D2L DISCUSSION PROMPT: PROBLEM SOLVING STRATEGIES

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Problem Solving Strategies" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Problem Solving Strategies

1. After studying the Problem Solving Techniques chart, what techniques do you currently use in your science class? Which ones do you want to try?
2. After analyzing the Problem Solving Characteristics chart, what characteristics do you currently possess? Which ones would you like to develop?
3. The questions/comments/concerns I have regarding problem solving in my science class are…

CHAPTER 13

TEST TAKING STRATEGIES

INTRODUCTION

For the majority of students, taking tests, especially midterms and final exams, may be one of the most stressful experiences they have to go through, especially in the beginning of their college career. Even if you've studied for hours and know the material well, the experience of sitting in that eerily quiet room as the professor hands out the exam can be an overwhelming experience.

Test taking is a skill, and learning how to effectively take an exam can be as challenging as the material on the test. While no test-taking strategy can be a substitute for actual mastery of the material, in this chapter we attempt to support your mastery of the subject matter with some tips to alleviate test anxiety and give you some practical knowledge, with the ultimate goal of increasing your performance during tests.

TEST-TAKING STRATEGIES ASSIGNMENTS

1. ***Study this chapter*** *carefully. Make sure you find out as much information as possible about your upcoming exam: types of questions, length, materials to study from, etc.*
2. *Complete the* ***Test-taking Strategies Activities #1 & 2****.*
3. *OPTIONAL: Using the* ***Bloom's Taxonomy*** *chart provided in this chapter, study guides, or chapter reviews, practice creating and answering possible exam questions.*
4. ***D2L Discussions Forum:*** *post your thoughtful response to the* ***"Test-Taking Strategies"*** *topic at least a day BEFORE you meet with your SSC instructor.*

TEST-TAKING STRATEGIES ACTIVITY #1

Complete the following self-evaluation of test-taking skills. For each of the following strategies, mark if you do it **always**, **sometimes**, or **never**. Highlight any that you do not currently use that you think might help you be more successful.

Test-taking Strategy	**Always**	**Sometimes**	**Never**
1. While studying my notes and the book, I think of and answer possible test questions.			
2. I use online practice quizzes when they are available.			
3. I avoid last-minute cramming because I don't want to get confused.			
4. I scan the whole test before starting to see how long it is and what type of questions it contains.			
5. I do the questions I am sure of first.			
6. I budget my time during a test so that I can complete it.			
7. I answer questions with the highest point value first.			
8. I read all answer options on multiple choice questions before marking my answer.			
9. I know what key words to look for in a multiple choice question.			
10. I use the process of elimination during multiple choice or matching tests.			
11. I know what key words to look for in essay questions.			
12. I use the process of elimination during multiple choice or matching tests.			
13. When I am unsure of an answer, I go with my first choice and fight the urge to change it later.			
14. I try to answer everything even if I am uncertain, instead of leaving some questions blank.			
15. I check my answers before turning in the test.			

WHAT TO DO…

BEFORE THE TEST

- Don't panic. Be **fully prepared** and you will feel better about taking the test. You should study close to the time of the exam. If you follow the usual pattern of intensive reviewing for the test, look for basic rules and generalizations, learn in meaningful units.
- Find out what **type of test** it will be (essay, true/false, etc.) Ask the instructor.If you have had an exam with this instructor before, try to recall the types of information asked for on the previous exams. It is never certain that one test will be like another, but the instructor will probably emphasize the same types of concepts. Ask for practice questions.
- Try to **predict exam questions**, using your notes and readings to make up your own exam. Prepare for the specific task at hand by making an exam (and taking it) like the one you expect to see in class. Questions should be constructed on the subject matter that the instructor has indicated is important. When you get to the exam, you will not be asked to read the text, take notes, or review your notes. YOU ARE GOING TO TAKE AN EXAM. PRACTICE WHAT YOU ARE GOING TO DO. If you are going to take an essay exam, don't practice by making up a multiple-choice exam.
- You will retain what you learn in class longer if you spend a few minutes **going over your notes that same day** before you start to forget the information. If you do this, you will find that when you review just prior the exam, you understand your notes better.
- Be **fully rested** before you take your exam and relax.

DURING THE TEST

- Arrive at least 10 minutes early.
- Try to relax. To reduce anxiety, **breathe deeply and slowly**. Remind yourself that it is normal to be nervous when sitting down to take a test.
- **Sit away from friends** who might distract you – don't let others writing furiously make you nervous.
- **Read all directions** carefully and analyze the questions before answering them.
- **Skim the entire exam first** to get an idea of what material is being asked for and how the test itself is organized. Pay attention to the way the points are distributed.
- **Check the clock**; pace yourself and plan your time wisely. Note which questions are given most point value and which are most difficult. Questions given more points should be allotted more time.
- Use an erasable pen or pencil.

- It is common to panic when you see a difficult question or something you don't know. Don't be discouraged. **Answer questions you do know first**. After you relax more and look over the test, information you could not recall may come to you.
- If you do not know the answer, skip it and come back to it later.
- If you do not know the answer, and there is no penalty for guessing, then **go ahead and guess**!
- If you are confused by an item, **ask the instructor to clarify** (if permitted).
- On tests, first impressions are usually correct; play hunches. **Do NOT change** answers unless you are absolutely sure they were wrong.
- Don't spend time on what you don't know.
- Some true/false, and/or matching questions may provide you answers to essay questions.
- **Don't worry if others finish before you** – finishing first doesn't guarantee a good grade.
- Use all the time allocated for a test.
- **Check your work** before handing in your paper. Have you answered all of the required questions? Have you answered each one fully?
- Take a few minutes after you have finished the test **to reflect on your answers**. Also, make sure you double check that you filled your scantron correctly.

AFTER THE TEST

- **Relax** and give yourself time to rest and debrief.
- When you receive the results, do a **thorough test analysis** to determine how you could do better next time. Were your notes inadequate? Did you miss an assignment? Did you not read the material? What material did the teacher use on the test?
- Revise your studying patterns and **design a new strategy** for your next test.

HINTS FOR TAKING OBJECTIVE EXAMS

1. Read, understand, and carefully follow all directions.
2. Read the entire exam, and answer the easy questions as you go along.
    - The easiest questions are not necessarily the first questions.
    - The later questions may provide clues to answering the earlier questions.
    - As soon as you mind registers a question, it begins working on the answer.
3. After you are finished, re-read the exam if you have time.
    - Don't change an answer unless you are absolutely sure it is wrong.
    - Look for and correct silly errors.
4. Give the answer you think the teacher expects even if you don't fully agree.
5. If permitted, mark up the test to reflect your thought process. Pay attention to words like: **not, before, after**, etc.

True – False Tests

1. Watch out for key words that allow or don't allow for exceptions.
    - All, always and never usually (but not always) indicate false.
    - Some, sometimes, and often likely indicate true.
    - Research has established the following trends on the bases of a great number of questions collected from teachers.
        a. Four out of five statements containing 'all' were false.
        b. Four out of five statements containing 'none' were false.
        c. Nine out of ten statements containing 'only' were false.
        d. Three out of four statements containing 'always' were false.
        e. The longer the statement, the more likely it was true.
        f. Four out of five enumeration statements were true.
        g. Two out of three reason or 'because' statements were true.
        h. Three out of four statements containing 'generally' were true.
    - There is a tendency for extremely positive statements to be false, and for qualified statements to be true.
2. In true/false statements, if any part is false, the whole statement is false.

Multiple Choice Tests

1. Try to predict the answer before reading the answers given. If you read the question and know the answer, look for it in the choices given. If permitted, you may find it helpful to write it next to the question.

2. Choose **the best choice** from those given. The best choice may not seem completely satisfactory to your sensibilities, and more than one answer may look correct.

    - Read all choices carefully, and mark TRUE or FALSE for each individual choice. Then, go back and check to see if more than one answer could be correct. (E.g. two of the above, all of the above).

    - Occasionally, incorrect responses can be eliminated because they are grammatically inconsistent with the question.

    - If you don't recognize a word in one of the choices, it doesn't mean that is the correct answer. It may well be a foil, or just plain humor.

    - The correct choice will often look like a foil. Be careful and pay attention to detail!

3. Make sure your answer is related to the question.

    - When you think you have found the answer, ask yourself, "Does this really answer the question?" Sometimes a response may contain a true statement, but it is not the correct or best answer for the question being asked.

4. Be aware of grammatical clues or other language clues among the choices.

    - "An" predicts an answer that begins with a vowel.

    - "ies" or "s" predict the answer will be plural.

    - Sometimes test builders give clues right in the answers by using the same words in the correct response that were used in the question.

5. Sometimes the answer to one question may be found in the statement of another question on the test.

Matching Questions

1. Don't assume an answer can be used only once unless told so.

2. Take advantage of the process of elimination by doing the easy parts first.

3. Look for grammatical or contextual clues that may be helpful.

HINTS FOR TAKING ESSAY (SUBJECTIVE) EXAMS

1. Always thoroughly read all the questions before beginning.
2. Create a tentative time distribution plan.
    - Answer the questions that are easy for you first.
    - Then go back and answer the harder questions, regardless of the point values of the questions.
    - If multiple essay questions are related, they may be leading you to the correct answer. Look for leads.
3. Follow the directions carefully.
4. Keep a scanty outline on a separate sheet of paper.
    - This should be a list of reminders so that you won't forget some point you intend to include.
    - Sometimes when you are writing the answer to question1, you will think of a point to include in question 3.
5. Write neatly and clearly- you cannot get points for correct answers if the instructor cannot read your writing.
6. Keep the instructor's point of view in mind when organizing and writing out your answers.
7. Always leave space after your answers in case you need to make changes or additions.
    - Double-space the entire essay if possible to allow for easier changes.
8. Write something for each question- partial credit is better than no credit.
    - Begin with key, basic information
    - Then, fill in supporting details.
9. If you have time, look over your exam when you are done checking for:
    - Whether or not you followed the directions
    - Omission of a question or part of a question
    - Accuracy and clarity of your statements
    - Gross grammatical errors

Finally, keep in mind the following:

1. None of the above is a substitute for knowing the subject matter, however, it may help you pick up a few extra points on some of your tests.
2. You must diagnose the instructors' testing techniques to determine whether or not his/her tests have any of these flaws. A clever test-builder can ruin a testee who tries to 'scope out' the answers to questions instead of employing knowledge of the subject matter.

USING DIRECTION WORDS ON ESSAY QUESTIONS

The following words are commonly found in essay question. Understanding them is essential to success on these kinds of questions. Study this sheet thoroughly.

Analyze	Break into component parts and discuss, examine or interpret each part.
Compare	Examine two or more things. Comparisons generally call for similarities between things rather than differences.
Contrast	Examine two or more things. Contrasts call for differences.
Criticize	Make judgments. Evaluate comparative worth. Criticism often involves analysis.
Define	Give the meaning. Typically, these answers are short.
Describe	Give a detailed account. Create a picture with words. List characteristics, qualities and parts.
Discuss	Consider and debate or argue the pros and cons of an issue. Write about any conflicts regarding an issue.
Enumerate	List several ideas, aspects, events, qualities, etc.
Evaluate	Give your opinion or cite an expert opinion. Include supporting evidence.
Illustrate	Give concrete examples. Explain clearly by using comparisons or examples.
Interpret	Comment upon, give examples, describe relationships.
Outline	Describe main ideas, characteristics or events.
Prove	Support with facts.
State	Explain precisely.
Summarize	Give a brief, condensed account with conclusions.
Trace	Show the order of events or progress of a subject or event.

TABLE 1- BLOOM'S TAXONOMY

Competence	Skills Demonstrated
Knowledge	• Observation and recall of information • Knowledge of dates, events, places • Knowledge of major ideas • Mastery of subject matter • ***Question cues*: list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.**
Comprehension	• Understanding information • Grasp meaning • Translate knowledge into new context • Interpret fact, compare, contrast • Order, group, infer causes • Predict consequences • ***Question Cues:* summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend**
Application	• Use information • Use methods, concepts, theories in new situations • Solve problems using required skills or knowledge • ***Question cues:* apply, demonstrate, calculate, complete, illustrate, solve, examine, modify, relate, change, classify, experiment, discover**
Analysis	• Seeing patterns • Organization of parts • Recognition of hidden meanings • Identification of components • ***Question cues*: analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer**
Synthesis	• Use old ideas to create new ones • Generalize given facts • Relate knowledge from several areas • Predict, draw conclusions • ***Question cues*: combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite**
Evaluation	• Compare and discriminate between ideas • Assess value of theories, presentations • Make choices based on reasoned argument • Verify value of evidence • Recognize subjectivity • ***Question cues*: assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize**

*From Bloom, B.S. (Ed.) (1956) Taxonomy of educational objectives: The classification of education goals: Handbook I, cognitive domain. New York; Toronto: Longmans, Green.

TEST-TAKING STRATEGIES ACTIVITY #2: PRE-EXAM SURVEY

1. Which of the following activities have you completed so far? (Circle as many as apply)

    a. Preview the assigned reading material before coming to lecture
    b. Attend all lectures
    c. Review last lecture's notes before the next lecture
    d. Rewrite notes
    e. Integrate the lecture notes with the text
    f. Organize basic concepts using charts, lists, notes, tables, etc.
    g. Self-test on material to be covered on the exam
    h. Prepare answers for the learning objectives
    i. Practice explaining or "teaching" concepts to a friend (real or imaginary)
    j. Attend Beacon meetings
    k. Study old tests and re-arrange questions and predict new questions
    l. Study with friends
    m. Get extra help from the instructor, IA, or tutor
    n. Study material regularly instead of cramming at the last minute.

2. What other study techniques are you using to prepare for the exam?

3. What do you plan to do between now and the exam?

4. How much time have you spent preparing for this exam so far?

5. Do you feel prepared for this exam so far? Explain why or why not.

6. What, in your prediction, will be the layout of the exam (e.g. multiple choice, essay, true/false, labeling, etc)?

7. Other comments?

D2L DISCUSSION PROMPT: TEST TAKING STRATEGIES

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Test-taking Strategies" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.

   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**

   Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Test-taking Strategies

Important: Please note that only prompts that answer all of the questions below will be graded.

1. Summarize your previous experiences in taking exams. You can talk about positive or negative experiences. Do you have exam anxiety? How do you manage your time during an exam?
2. Considering the current science class you are taking, what are 2 or 3 ideas/suggestions from the **Test-taking Strategies Assignment** that you are going to apply/use in preparation or during taking your next test?
3. The questions /comments /concerns I have regarding preparing for and taking exams in my science class are…

PART 5: FINE-TUNE YOUR LEARNING PROCESS!

ASSIGNMENTS

CHAPTER 14 - LEARN FROM THE PAST: EXAM ANALYSIS

CHAPTER 15 - FINAL WEEK ACTIVITIES

CERTIFICATE OF COMPLETION

CHAPTER 14

LEARN FROM THE PAST: EXAM ANALYSIS

INTRODUCTION

There is a lot you can learn by looking back on your performance on an exam. By correcting the wrong questions and analyzing your study patterns, you can make radical changes and improvements if needed, for future exams. Plus, you will have the opportunity to master the material covered on the exam.

EXAM ANALYSIS ASSIGNMENT

NOTE: *Make sure you can have access to your exam after your instructor grades it. If the instructor* ***does not*** *let you keep your exam, arrange with him/her to send your exam to the SSC* ***or*** *meet with the instructor during office hours so that you can complete this assignment. The exam analysis needs to be completed* ***before*** *you meet with your SSC instructor.*

1. *Complete Parts ONE and TWO of the* ***Exam Analysis Activity*** *by carefully studying each question on the exam and following the instructions in this chapter.*
2. ***D2L Discussions Forum:*** *post your thoughtful response to the* ***"Exam Analysis"*** *topic at least a day BEFORE you meet with your SSC instructor.*

EXAM ANALYSIS ACTIVITY

PART ONE

A. On a separate sheet of paper, complete the following steps for each question you missed on the exam:

1. Rewrite the question in your own words and provide the correct answer.
2. Explain why your answer cannot be correct.
3. Explain why you missed the question:

    a. misread or didn't understand question
    b. used incorrect logic
    c. didn't know enough information to answer the question

4. Indicate where most of the information needed to perform well on this exam was located:

    a. textbook
    b. own notes
    c. instructor handouts
    d. other_____

B. Now look at the questions you answered correctly. From the list below, circle **the top five activities** that helped you the most.

1. Previewed the assigned reading material before coming to lecture
2. Attended all lectures
3. Reviewed last lecture's notes before the next lecture
4. Rewrote notes
5. Integrated the lecture notes with the text
6. Organized basic concepts using charts, lists, notes, tables, etc.
7. Self-tested on material to be covered on the exam
8. Prepared answers for the learning objectives
9. Practiced explaining or "teaching" concepts to a friend (real or imaginary)
10. Attended Beacon meetings
11. Studied old tests and re-arrange questions and predict new questions
12. Studied with friends
13. Got extra help from the instructor, IA, or tutor
14. Studied material regularly instead of cramming at the last minute.
15. Ate a meal prior to the exam
16. Got ample sleep the night before the exam

Table 1- Bloom's Taxonomy

Competence	Skills Demonstrated
Knowledge	• Observation and recall of information • Knowledge of dates, events, places • Knowledge of major ideas • Mastery of subject matter • *Question cues*: list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.
Comprehension	• Understanding information • Grasp meaning • Translate knowledge into new context • Interpret fact, compare, contrast • Order, group, infer causes • Predict consequences • *Question Cues:* summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend
Application	• Use information • Use methods, concepts, theories in new situations • Solve problems using required skills or knowledge • *Question cues:* apply, demonstrate, calculate, complete, illustrate, solve, examine, modify, relate, change, classify, experiment, discover
Analysis	• Seeing patterns • Organization of parts • Recognition of hidden meanings • Identification of components • *Question cues*: analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer
Synthesis	• Use old ideas to create new ones • Generalize given facts • Relate knowledge from several areas • Predict, draw conclusions • *Question cues*: combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite
Evaluation	• Compare and discriminate between ideas • Assess value of theories, presentations • Make choices based on reasoned argument • Verify value of evidence • Recognize subjectivity • *Question cues*: assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize

BLOOM'S TAXONOMY WORKSHEET

Using your exam, find an example for each of the categories and write the question in the chart below.

Competence	**Write a question from the exam**
Knowledge *Question cues*: list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.	
Comprehension *Question Cues:* summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend	
Application *Question cues:* apply, demonstrate, calculate, complete, illustrate, solve, examine, modify, relate, change, classify, experiment, discover	
Analysis *Question cues*: analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer	
Synthesis *Question cues*: combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite	
Evaluation *Question cues*: assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize	

D2L DISCUSSION PROMPT: EXAM ANALYSIS

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

1. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
2. Once you are on the course homepage, click on the Discussions tab, and then on the **"Learn from the Past: Exam Analysis" discussion post**.

   If you **do not see this discussion post listed**, it means that it was probably not released. Please contact us immediately at (916)484-8204 or email us at ssc@arc.losrios.edu, and one of our staff members will release it for you.
   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.** Alternately, you can compose your answer to the discussion prompt in a word processing document, and then copy and paste it in your D2L discussion board by following the steps in (B). This is recommended especially if you feel you need to revise your answer, want to use more editing features than available in D2L, or have limited internet access.

3. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

D2L Discussion Prompt: Exam Analysis

Important: Please note that only posts that answer all the questions below will be graded.

1. Briefly reflect on your exam. Here are some questions to get you going. you don't have to answer all of them, but they are just here to help you reflect back on the exam.
   - What did you do to prepare for the exam? How did you study? How long did you study?
   - How did the actual exam process go? Did you have enough time? Did you answer all the questions or left some blank? Were you nervous or anxious, distracted by your surroundings?
   - Do you feel your results match your expectations for this exam? Was there anything on the exam that you didn't expect?
2. After completing the exam analysis and reflecting on the last exam, what strategies are you going to use for the next exam?
3. The questions /comments /concerns I have regarding the exam analysis I completed or the preparation for my next exam are…

CHAPTER 15

FINAL WEEK ACTIVITIES

PROGRAM EVALUATION: ONLINE SURVEY

FINAL D2L DISCUSSION: LETTER TO FUTURE STUDENT

CERTIFICATE OF COMPLETION

PROGRAM EVALUATION: ONLINE SURVEY

Your **final SSC assignment** is to go to the website below and complete a short online survey.

http://elisten.arc.losrios.edu/cgi-bin/qweb.cgi?47hbff3

Thank you for attending the SSC this semester!

FINAL D2L DISCUSSION: LETTER TO FUTURE STUDENT

In order to complete the **D2L discussion prompt required for this assignment**, follow the steps below:

4. **Log in to D2L** by going to the following webpage: www.d2l.losrios.edu. Click on Fall 2012, and then on **Science Skills Center: Biol 490**.
5. Once you are on the course homepage, click on the Discussions tab, and then on the **"Learn from the Past: Exam Analysis" discussion post**.

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   Read the prompt at the top of the page (or you can read it below) and then click **Compose**. You can give your post a subject or just skip this step. Then, click in the text box and type up your answer to the prompt questions. When you are done, you can click **Save Draft** to edit your post later, or **Post** to submit it. **Please note that your instructor will NOT see your answer until you click Post.**
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6. Post your answer no later than **ONE day (24 hrs) before your next SSC appointment** so that your instructor has time to review and grade it. Thank you!

Final D2L Discussion Prompt: Letter to Future Student

In your last SSC D2L discussion, please compose a letter to a student who will take the science class you are taking this semester. In this letter, reflect back on your learning experience, and focus on the study skills you needed to be successful. Talk about the study methods you used, and how they helped you, as well as how much time you invested in preparing for your class. You can also recommend possible resources the student may use to help him/her succeed.

The format of your post should be that of a real letter. Start your post with "Dear future _____ (science class) student," and end with "Sincerely, _____ (your name)." This letter will remain confidential and your name will not be shared with anyone outside the SSC.

Thank you for attending the SSC this semester, and we hope that you will be able to apply the skills you learned to future classes. Remember that you can enroll in the SSC up to 4 times as a co-requisite for other science courses you may take in the future.

Certificate of Completion

This certificate is awarded to

Name _____

For completing the SSC program in the _____

Science Skills Center

This certificate attests that the student mentioned above has earned 1/2 a semester unit in Biology 490.

_____

SSC Instructor Signature Date