Studying for Math & Science

The Academic Achievement Center
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Focus Questions

- When is the best time to begin studying?
- Where should I study?
- What can I use to study other than lecture material?
- Are study groups beneficial?
- What are some common test taking errors?
- What is math anxiety and how do I address it?
- How do I relax during an exam?
When do you start preparing for a test?

How far ahead of time do you begin?

- You must be actively involved with learning math and science
- Process new information and add it to your memory bank
Differences in Courses that you take:

- Math and Physics – knowing formulas and when to use them to find the right answer
- Chemistry – Learning atomic formulas and how to use and understand them
- Biology – answers depend on the situation (problem, example, story), answers are more sensitive to interpretation

- VERY IMPORTANT to learn the **vocabulary** of the class!!
  - For example names of elements, formulas, vocabulary words
  - If you have limited study time – Learn the vocabulary first so that you will at least understand the questions!
The knowledge of math and science courses is **CUMULATIVE**.

Many concepts build on previous information, and poor understanding of one concept will likely lead to poor understanding of future material.

Use your professor as a primary resource **EARLY** and seek tutoring and other academic support as needed.

Professors WANT to help students, but you must show effort and interest in order for them to help you!
Studying

Factors to consider...

- **First:** The environment
- **Second:** How you learn (learning styles)
- **Third:** Type of material to be studied
- **Fourth:** Professor’s teaching style

KNOW YOURSELF...

Do what works the best for you!
What should I use to study?

1. **Class notes**, problems, examples
2. Class handouts (slides/presentations)
3. Homework problems
4. Textbook
5. Previous quizzes and tests
6. Concept Maps for key terms
Specific Strategies for Math

- Do your homework day-by-day
- Flashcards with homework exercises
- Write the procedure
  \[ 25+20 \div (-4)(3)^2 \]
- Revisit previous concepts
- Do quiz and test corrections

Neil Starr, Math specialist, Nova Southeastern University
Specific Strategies for Science

- Write cues in margins
- Look back and forth between words and related graphics
- Visit [www.studygs.net/science/readingtexts.htm](http://www.studygs.net/science/readingtexts.htm)
- Visit [www.khanacademy.org](http://www.khanacademy.org)
- “DO” as much as possible with the material
Study Groups (~ 3 to 5 people)

Discussion Point:
How can study groups be beneficial?

- Teaching concepts to friends – if you can teach it to someone, you know it!
- Friends/Classmates?
- Timing, when should you have a study group?
Test-Taking Errors

1. Directions errors – *failing to follow directions*
   - Watch for “compare and contrast” or “give an example” or “similarities AND differences”

2. Concept errors - *not understanding the material*

3. Application errors - *understand the material, but have difficulty applying it*
   - *Practice makes perfect!*

4. Study errors - *the study technique you used was not the BEST way to study that set of information*
Test Taking TIPS

For Essays:

- Figure out what the question is asking
- Plan out what vocabulary words/concepts you want to use
- Answers should be concise and to the point and FULL of content (this is not an English class, you do not need to write a full essay)

For Multiple Choice Questions:

- Read the question carefully
- Cover up the possible answers, and treat the question like a fill in the blank
- Decide on your answer and look for it in the choices
- CAUTION: Professors want to make sure you know the right answer… there will be at least one “good” wrong answer
Math Anxiety

1. A learned behavior stemming from expectations of parents, professors, or other significant people
2. Caused by the association between scholastic achievement and a student’s self worth
3. Developed from fear of alienating parents, family, and friends due to poor grades
4. From feeling a lack of control and the inability to change the situation
5. Caused by the student being embarrassed by the teacher and/or peers when trying to complete a math problem
6. Caused by timed exams and the fear of not completing the exam even if all problems can be finished in the time allotted
7. Caused by placement in a math course above the student’s ability level
Learn to Relaaaax

Chair Flexing Method

1. Put your feet flat on the floor.

2. With your hands, grab underneath the chair.

3. Push down with your feet and pull up on your chair at the same time for about 5 seconds.

4. Relax your muscles for five to ten seconds.

5. Repeat the procedure two to three times.

6. BREATHE!
More Relaxation

The Palming Method

1. Close and cover your eyes using your palms.
2. Prevent your hands from rubbing your eyes.
3. Picture yourself in a relaxing scene.
4. Visualize this relaxing scene for one to two minutes.
Relaxation Techniques

Discussion Point:

What other relaxation techniques do you use?

**Remember to pick up any scan-trons or Blue Books the day BEFORE your test!**
Don’t be afraid to ask for help...

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