Math Study Skills

Introduction: The Problem

- I'm not smart enough
- College math is too hard
- I've always hated math
- I have a bad instructor
- I freeze up on tests

The right approach is more important than how smart you are. Anyone coming into this classroom can do the math we’re talking about here.

Get your attitude together

Stop blaming other people

You are responsible for your own education
Math anxiety is a learned behavior, so it can be unlearned. We’ll introduce techniques to change this behavior.

Success in Math is one of (if not THE) biggest problems facing college students.

Why is Math so Difficult?!?!

- Math is a Foreign Language
- Math is Skill-Based
- Your Math Background
- Attitudes about Math

There are quite a few Differences between learning math in High School and learning math in college and the Math Center.

Attendance is required in both cases, but more flexible in the Math Center.

High school Teachers monitor progress closely, whereas Math Center students need to monitor their own progress.

Beginning algebra is covered over the course of 10 months for 6 or 7 hours a week in high school, whereas it is intended to be covered in 4 months for 4 hours a week in college.

High school students have contact with the instructor every day as opposed to occasional contact in the Math Center.

High school teachers cover all material for tests in class through lectures and/or activities, whereas Math Center students are responsible for learning the material on their own with minimal support.

High school grades are often based heavily on participation and effort, whereas Math Center grades are based...
What skills have you developed to this point to help you learn math?
- maybe you’ve learned how to block out uninterrupted study time with support from your friends and family.
- maybe you’ve learned effective math test-taking strategies.
- maybe you take careful notes, and archive them for reference when you prepare for cumulative exams.

What are the areas in which you need improvement?
- Let’s face it. None of us are perfect master students. in fact, most students in this class are still working on refining their study skills. That’s why we cover the key study skills in the Getting Started workshop and this presentation.

Part 2, Math Anxiety

As many as 30% of college students say that they struggle with math anxiety.

Symptoms of Math Anxiety
Skipping Class and Homework
• Refusing to take Responsibility
• Freezing on Exams

“The Cure for Math Anxiety” (Woody Allen)

The Cure for Math Anxiety
Do Math Everyday
• Even if it’s just for 15 minutes

Study Smart
• Use note cards
• Find a study group
• Keep a well-organized math notebook.

QUIZ YOURSELF!!
To succeed in math, studying math must be a top priority. You know from the Getting Started workshop that it takes 12-15 hours per week dedicated to studying math to complete this course. That’s why you created a weekly schedule with hours dedicated to study math. Now, you need to keep to that schedule, and update it as your life circumstances change.

Another useful tool to manage your time is a semester calendar. You already created a customized one-semester calendar in the Getting Started Workshop. Keep your focus on these deadline dates.

A blank calendar and general weekly schedule are posted on the Math Center Website in the Math Center Documents link. You can reprint these and update them as needed.

**Part 3: Managing your Time**

**Weekly Schedule**
- Already created
- Keep it up to date and stick to it.

**Part 4: Learning Styles**

**The Three Primary Learning Styles:** Visual, Auditory, Kinesthetic

**Which learning style is best for you?**

**Visual learners:**
prefer watching a lecture or video lesson rather than reading about it or listening to an explanation.

**Auditory learners:**
get more from listening to lecture or a tutor than from writing down information

**Kinesthetic learners:**
Here are some Study Tips for Your Learning Style:

**Visual:**
Rewriting information so that you see it again is very important for remembering it.
Today’s math textbooks are HIGHLY visual! Read the text.
Watch the video lessons for each section.

**Auditory:**
Find a place where you won’t bother anyone and study out LOUD! Say everything out loud.
Use a recording device to record lectures and record yourself saying formulas. Listen.

**Kinesthetic:**
You have to get active. Move. Pace. Actually walk out a formula.
Buy magic markers and make note cards. Rewrite your notes. It will work wonders.

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**Part 4: Learning Styles**

**Math Study Skills**

**Part 5: Class Time and Note Taking**

**BEFORE CLASS**
- The warm-up
- Be punctual
- Get a good seat

**The warm-up – like warming up before exercise or performing**
- Restate your positive affirmations
- Check your monthly schedule for due dates and current sections of study.
- Assemble the notes and textbook pages that you are currently studying into your math travel notebook.
- Collect materials: pencils, erasers, highlighters, headphones, calculator, Math Notebook
- Review prior notes, homework and tests – prepare questions for the tutor
- Write your BRP outlines for the new sections you’ll cover today.

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Being organized in math class is essential. Keeping a well organized Math Notebook will turn math from an ocean of confusion to a smooth flowing river of concepts, ready to be accessed exactly when you need them. Keeping a Math Notebook is one of the study skills that helps students be successful in learning math.

Students who use a math notebook swear by it. Most say that the math notebook is what got them through the course, especially through the tougher chapters. You’ll find more about keeping a notebook in the Notebook link in the online course. Also, in Chapter 6 of the math study skills book by Alan Bass.
During class, take notes in your math notebook. Let’s review the 5 sections of your notebook.

Handouts is for key handouts you’ll use as a reference. title page, weekly schedule, learning flow, orientation handout and more.

Notes is for bullet point outlines of the text sections as well as notes on video lessons, textbook reading, and the section summaries

Homework is where you work out all the homework exercises. Use a different color for corrections.

Tests is where you work out all the problems when you take a chapter tests. Use a different color for corrections.

Class time is performance time! Not time to catch up on sleep!

Note Taking
- Take notes on lesson video and textbook reading into the NOTES section of your notebook.
  - Key words and formulas go in the GLOSSARY section.
  - Rewind the video if you missed something
  - Look for highlighted items in the text for clues to important items
  - Personalize your notes – use a highlighter or colored pencils

Asking Questions
- circle questions for the tutor as you take notes

This is like the “cool down” an athlete/musician does after game/performances

Begin every study session by reworking and reviewing your notes. Just 15 minutes will reinforce the ideas and keep them fresh in your mind.

- Reread your notes
- Add clarifications and comments. Use colored pencils or highlighters
- Put a question mark in the left margin as a reminder to ask a tutor
- Highlight or circle vocabulary items and formulas

Reworking your notes makes them a valuable learning tool.
Stop being confused by your textbook! Try the SQRRR method for each section:

**Survey** Question  **Read** Recite  **Review**

You can find detailed information about SQRRR on the internet (nearly 1700 hits for Googling “sqrrr” recently).

**Survey:** scan the section, get a feel for the main ideas and topics. Write down a BPR outline of the objectives and main ideas.

**Question:** form any questions that pop out. Turn topic headings into questions.

**Read:** Be active – the mind will wander! Read out loud, copy the examples, work all of the margin exercises, write vocabulary and formulas in your notebook.

**Recite:** An often overlooked way to make a connection. Reciting is especially helpful for auditory learners.

**Before you do homework…**

Read the section in the textbook. This includes doing a BPR outline, watching the section video, reading the material, taking notes, and working the margin exercises.

After you are done, review the notes for that section. Review your BPR outline. Review your notes. Yes, it takes time, but this is the only way to learn the material.

**Then do the homework…**

Don’t even think about skipping the reading and margin exercises before doing the homework. Going directly to the homework is a recipe for disaster. Students who do this struggle with the unit exams, and inevitably fail the final exam and the course. So, they have to either have to retake the entire course, or, if it is their second failure or withdrawal, they are blocked from retaking the course.

“**What if I get bogged down with the homework?!!?”**

Look in the book and notes for a similar problem. Click “View an Example” in MyMathLab. Raise your hand for assistance by a tutor or faculty.

Join a **Study Group**! Form one if there isn’t one already! Trade phone numbers/emails, etc. with students that can help you learn the material.
Your brain is made of billions of synapses that connect to create memories.

When you don’t practice, you lose the connections.

That’s why you should do math every day and soon after class as possible.

It takes lots of practice and review to move your learning from short-term to long-term memory.

Part 7: Retention Techniques

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Note Cards

• Note cards are great for memorizing formulas, concepts, and how to do problems.
• Each card should only have one piece of information.
• Make sure that the cards are made so that you can quiz yourself.
• There are plenty of apps to create your own flashcards or notecards on your mobile device.

A great way to memorize formulas, concepts, and how to do problems is to create notecards. Carry them with you and quiz yourself when you are stuck in line or waiting for a friend.

Each card should only have one piece of information.

Make sure the cards are made so that you can quiz yourself.

There are plenty of apps to create your own flashcards or notecards on your mobile device.

Part 8: Test Taking

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Getting Ready for a test:

Just doing homework is not enough to make you a good test-taker. WHY?!? Well, there is no pressure, hints/answers/solutions are too handy, it’s not a similar environment, and there are no time constraints

To prepare for a test, you need to QUIZ YOURSELF!

Just you and your brain!
NO notes!
NO book!
Don’t check the book until you have your final answer(s).
Here are some things you can do to prepare for a test

- Get good sleep the night before and have a meal
- Review the “cheat sheet” you prepared as well as notes and problems that are difficult for you
- Assemble supplies: Pencils, eraser, ruler, and water. Bring a few pieces of hard candy; it can reduce anxiety
- Take care of personal needs and phone calls in advance
- Arrive ten minutes early
- Relax & think positive thoughts

During the Test:

Don’t freak out! Just follow these steps...

- Do a ‘Brain Dump’ of any formulas you might need.
- Read through the whole test before you try any problems
- Do the easiest problems first; then go back and do the tougher problems.
- Don’t second guess, but check your work

This workshop covered 8 different study skills that are key to studying math. If you are taking a class in the Math Center, you have plenty of schooling ahead of you. The more you hone your study skills, the better you will do in all your classes, not just math class. The presentation you just saw is posted as a PDF document on the Math Center Website for your convenience. Use it to review what you learned in this workshop.