

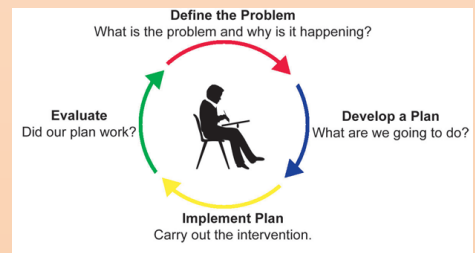
[math anxiety]

Why Do I Have to Learn MATHEMATICS?

Math Matters!

Mathematics is one of the basic skills that must be acquired in higher education for a very good reason.

Math teaches problem solving by starting with small problems and building skills to solve larger ones.



Learning math forms neural pathways in the brain that will *make thinking logically and rationally in times of stress easier*, making solving problems when stressed easier too.

The Struggle is REAL!

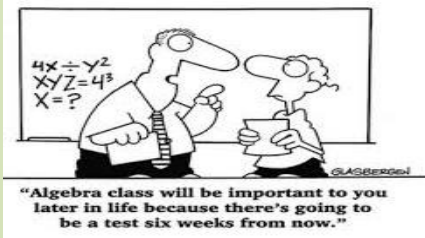
It is important to understand where your specific difficulty is in relation to mathematics:

Know what it is that you *don't* know!

Is the struggle with:

Basic skills? Algebraic reasoning? Problems solving. Do you need to understand how to approach certain types of problems? Are you struggling to decide which approach to use?

The best thing a student can do is to find a strategy to use that makes sense to the user and then - use that strategy.



What's the Point of Math?

Many students wonder why they have to take math when they are not pursuing a math related major.

This resistance to math can create a feeling that math and math related subjects are a waste of time and money.

Not having an open mind or positive attitude about math causes students to struggle harder than they should to understand the concepts.

First - ACCEPT that you can't get around taking mathematics in college.

Second - *Decide* to open your mind to the knowledge that awaits you.

Third - *Understand* that Math is about more than numbers, digits, $x+y=z$ and...

WORD PROBLEMS

How I see math word problems:



If you have 4 pencils and I have 7 apples, how many pancakes will fit on the roof? Purple, because aliens don't wear hats.

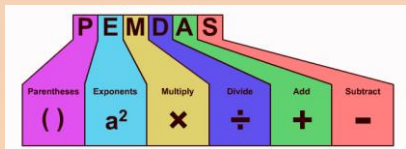




WHAT'S A STRATEGY?

Strategies are plans that specify the actions needed to complete an objective. Strategies may include the rules, steps and sequences needed to make decisions while solving problems.

- Use familiar words! If you don't understand the vocabulary of math - look up the definition and find another word that fits from your own vocabulary
- **Develop memory devices** like mnemonics to help you remember steps and formulas - and practice them until you know them.



The STAR Strategy

S = Search the problem carefully and write down exactly what you need to find.

T = Translate the problem into a picture form to help visualize and clarify

A = Answer the problem - without fear of right or wrong, just your best guess.

R = Review the answer (reverse operations) to see if it is reasonable

- Students who have a history of struggling with math may also need *strategies* to manage any related anxiety as anxiety can interfere with memory.

** Learn Stress management and relaxation techniques - *There's an app for that!*
Also YouTube and Google it! Learn and practice calming your anxiety BEFORE you need to!



Change Your Learning Approach

Do the easiest problems first - it helps to prepare your brain for mathematical thinking and success!

FIGHT negative thinking & self-talk

If you think you can or if you think you can't - either way, you're right!

Olympic athletes practice visualizing themselves standing on the podium wearing the gold medal!

Visualize yourself succeeding!

$$\text{Math Anxiety} = \text{Test Anxiety} (\text{Fear of numbers} + \text{Fear of unknown})$$

Avoid Making These Common Math Errors

1. *Misread directions error* - ie, directions say to reduce fraction to simplest form but did not reduce
2. *Concept error* - ie, not understanding that hundredths is two places to the right of the decimal, not knowing how to reduce fraction
3. *Test-taking error* - not using all the test-taking steps ie, reviewing answers, leaving no answer blank...
4. *Application error* - ie, solving the equation correctly but the set up was wrong, didn't line up the digits correctly

KNOW THIS: in math, all concepts are built on the previous concepts.

If you don't understand the last concept fully - go back and re-learn the concept.
Practice, practice, PRACTICE!



www.khanacademy.org

accuplacerpractice.collegeboard.org

www.aamath.com