



# CAN ASSESSMENTS LEAD TO A GROWTH MINDSET?

MASTERY-BASED GRADING IN A HIGH SCHOOL MATH CLASSROOM

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# Prior Knowledge

## Growth Mindset



Never  
Heard  
Of It



I Could  
Run A  
Workshop



# SETTING THE SCENE

The Grading

“Grading Smarter, Not Harder”

100% Assessments

Homework is optional,  
Not for points

Pilot Study





# CONNECTIONS TO RESEARCH



Growth Mindset

Neural Plasticity — and challenges to research

Mastery-based Grading



# CAVEATS



Teaching students explicitly about Growth Mindset has been shown to have a positive impact on student success and motivation.

In my study, I am not explicitly teaching about Mindset because I want to see if a Mastery-based Grading system that focuses on the output of students has an impact on the students' Mindsets.



# PRELIMINARY FINDINGS



## Mixed results.

Some students showed a strong shift toward a Growth Mindset. They recognized the connection between their effort and how well they were able to understand and use the material. To me, these were the most successful cases.


A larger portion of the student population recognized the connection between their effort and the grade they earned on assessments. This is a fairly positive result, but these students were still grade centered in their discussions.

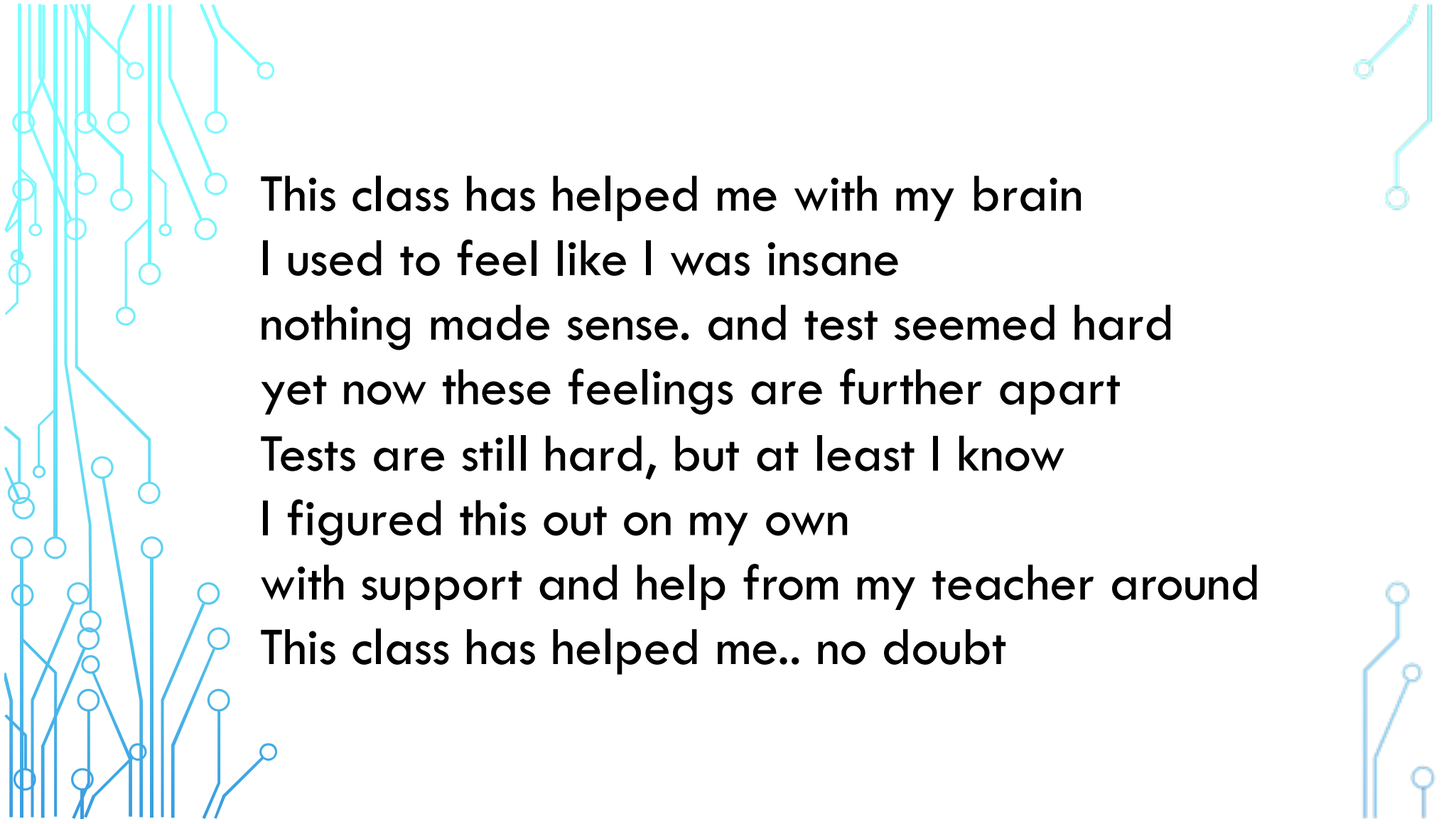
Some students showed no change at all with a few students demonstrating active resistance to the idea that their outcomes were based on their effort. (You know the ones.)



# A Student's Perspective

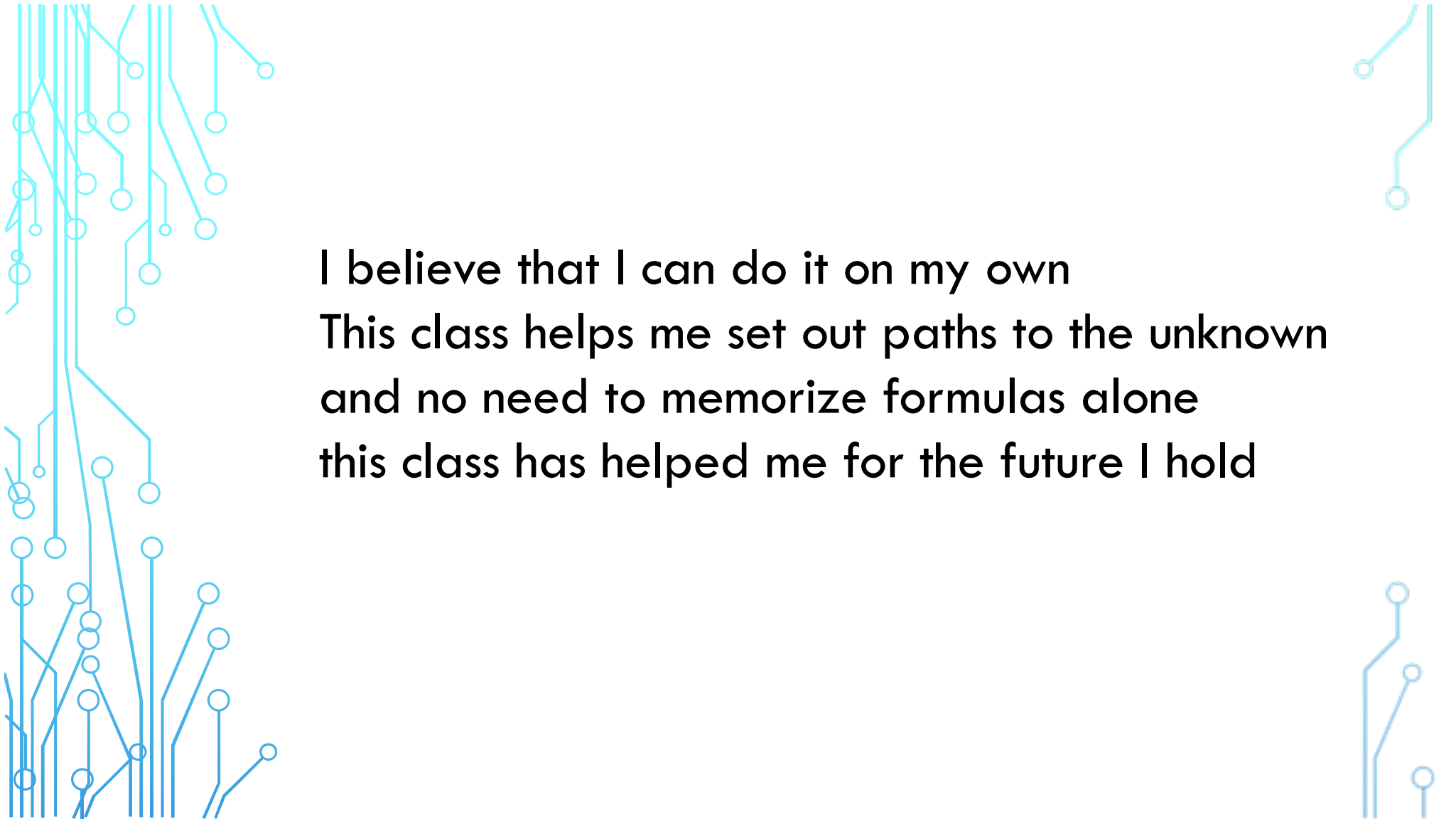
Not just about mastery-based grading, but about the whole class that includes discovery based learning approaches.





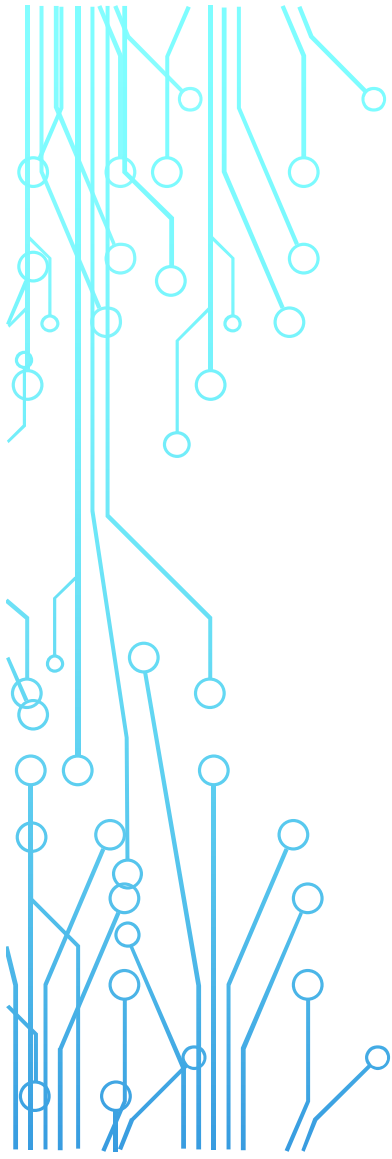


This class has helped me with my brain  
I used to feel like I was insane  
nothing made sense. and test seemed hard  
yet now these feelings are further apart  
Tests are still hard, but at least I know  
I figured this out on my own  
with support and help from my teacher around  
This class has helped me.. no doubt



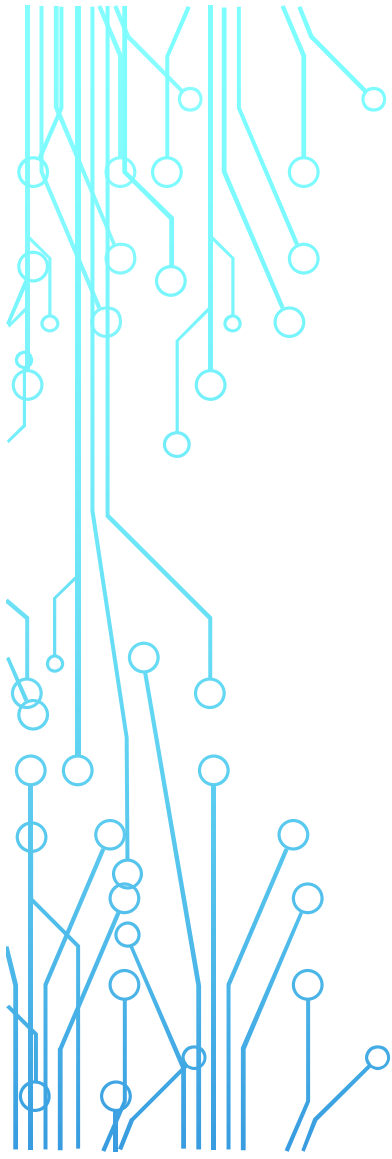





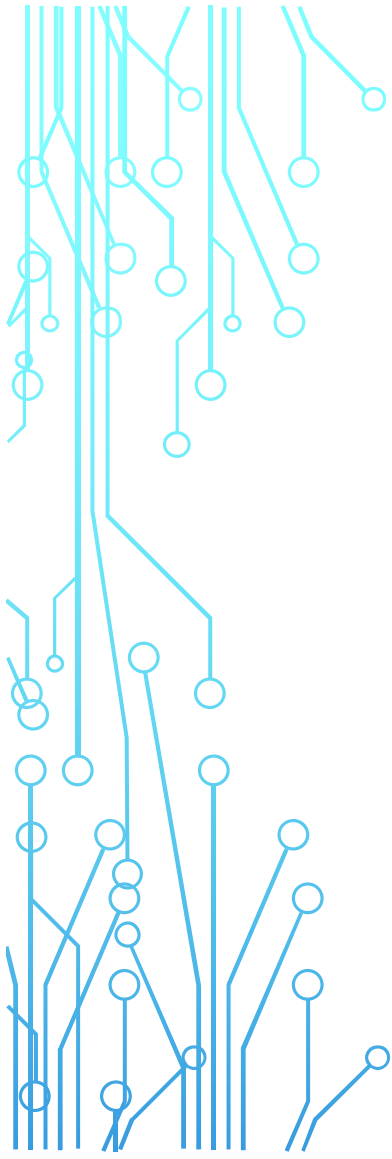
I believe that I can do it on my own  
This class helps me set out paths to the unknown  
and no need to memorize formulas alone  
this class has helped me for the future I hold




This class has helped me by teaching me  
I can do it with no lectur(ee)ing  
All I gotta do is ask a question  
and I get help in the matter of seconds  
We work together to figure it out  
and we stick together, no doubt  
even if we can't figure out the answer  
we can get help from our very smart teacher




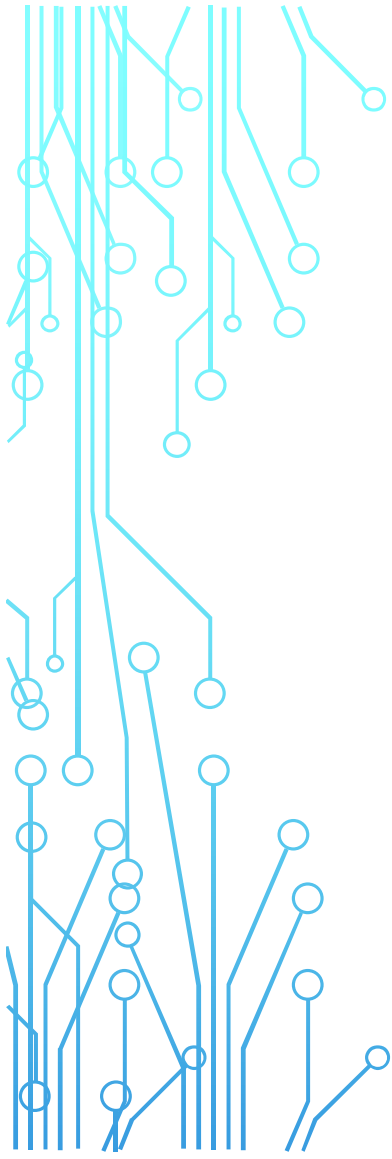
I used to get answers on a silver plate  
all of these classes were easy A's  
they'd give me the answer like it was easy bait  
but now i gotta work to get my good grades  
I like this better cause I'm more satisfied  
when I get the right answer after many tries  
thank you Teacher for making this work  
It's crazy how much I have really learned



In class, depending on my mood, I have differing levels of effort to pay attention and take notes, which leads to a range of test scores. Considering the last score of 99%, I know it's possible to do very well if I study hard, however that hard material adds a degree of uncertainty to my thinking.




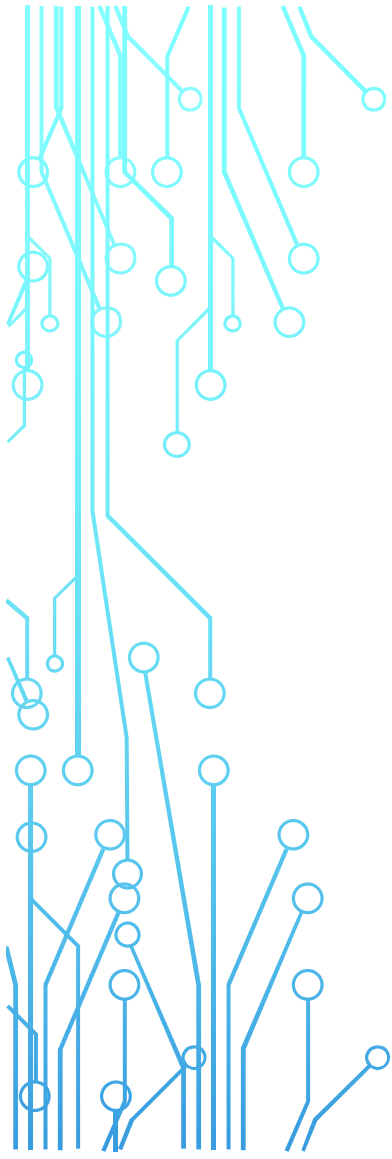
I am so grateful for the extra time that you allow me on tests. Also, permitting retakes of tests is beneficial for my learning. It allows me to look at a concept, attempt a problem, learn my mistakes, and try again. I have mastered so many techniques this way




Retaking tests for this class has definitely help ingrain in my mind things I otherwise would've memorized and then forgotten.

Because some of the work that we do outside of class is not graded I don't feel the need to do it. I can relate this to playing a sport, if you don't practice when it is not a game even if it does not seem necessary you are not going to be where you want to be at the end. This class has helped me realize that extra work is needed to succeed even if it does not matter.





This class has helped me so much!! I have really learned a lot about self-motivation and self-control. It was my first class having homework not count towards my grade, and that gave me a whole different perspective on learning. Instead of feeling like the teacher was forcing me to learn (through assignments), I really felt that I was the one pushing my own education. I'm really grateful to have had this opportunity to develop myself as a learner.



I have put maximum effort into the math class and I always try as hard as I can on every problem. Even if I get the answer wrong or make a mistake, I try again at the problem until I understand it and can do problems similar.



# WHAT I'VE LEARNED



Many young teenagers still need some external motivation to do their work. This was reported to me by multiple students from all levels.

Mastery-based Grading (based solely on assessments) has a potential to impact student Mindset. There is a question (for later research) about Mastery-based Grading having a multiplying effect on the explicit instruction of Growth Mindset.

The self-evaluation prompts that I used in the pilot study didn't really lead students to reflect on their Mindset.



# NEXT STEPS



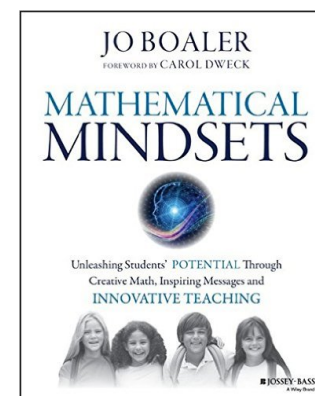
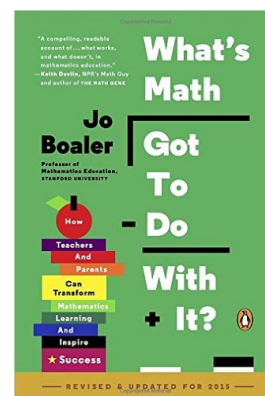
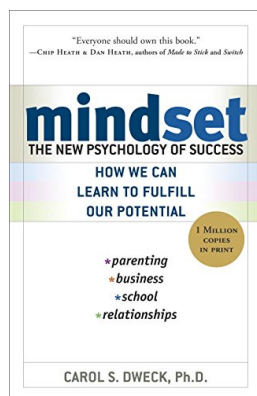
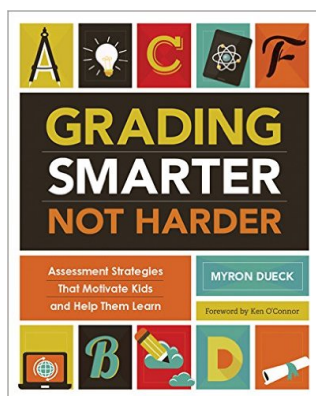
Differentiate the assessments I use to a greater degree.

Conduct my formal research project. (Results should be reported around this time next year.)

Working with a World Language teacher (Spanish and French) around her use of *Mastery-based Grading*.



# Resources

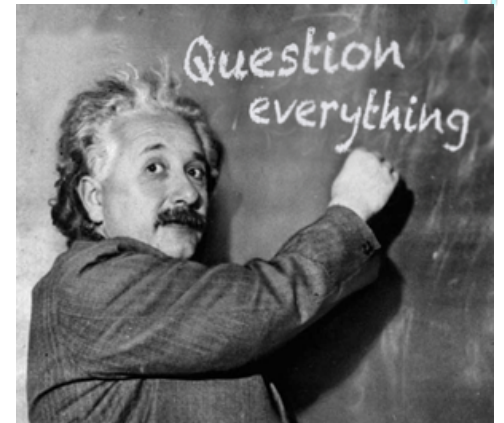


Growth Mindset: <http://mindsetonline.com/index.html>

November 2011 | Volume **69** |  
Number **3 Effective Grading Practices**  
Pages 72-75  
**How I Broke My Rule and Learned to Give Retests**  
*Myron Dueck*

November 2011 | Volume **69** |  
Number **3 Effective Grading Practices**  
Pages 22-26  
**Redos and Retakes Done Right**  
*Rick Wormeli*

# QUESTIONS?



Images from Google Image search