Go Forth and Multiply

(Or, How to Become a Mathematics Educator)

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Truman State University
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Outline

Who Am I?

- Mathematics professor
- Firm believer in the liberal arts
- Avid music listener ("I'm PHRE to Do What I Want")
- Trail/ultra runner

ALL inform my viewpoint (and it is **MY** viewpoint)

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Why Listen To Me? Perseverance

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- B.S. in Mathematics
- Minors in Asian Studies & International Studies
- General Honors (LINK: Honors Scholar)
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- Grader for Dr. Pflueger, MTCS professors; Pickler Library

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How Did Truman Help?

- Don't pay if you can avoid it!
- Leverage connections creatively. Tell a story!
- Communicate *within* and *across* disciplines.

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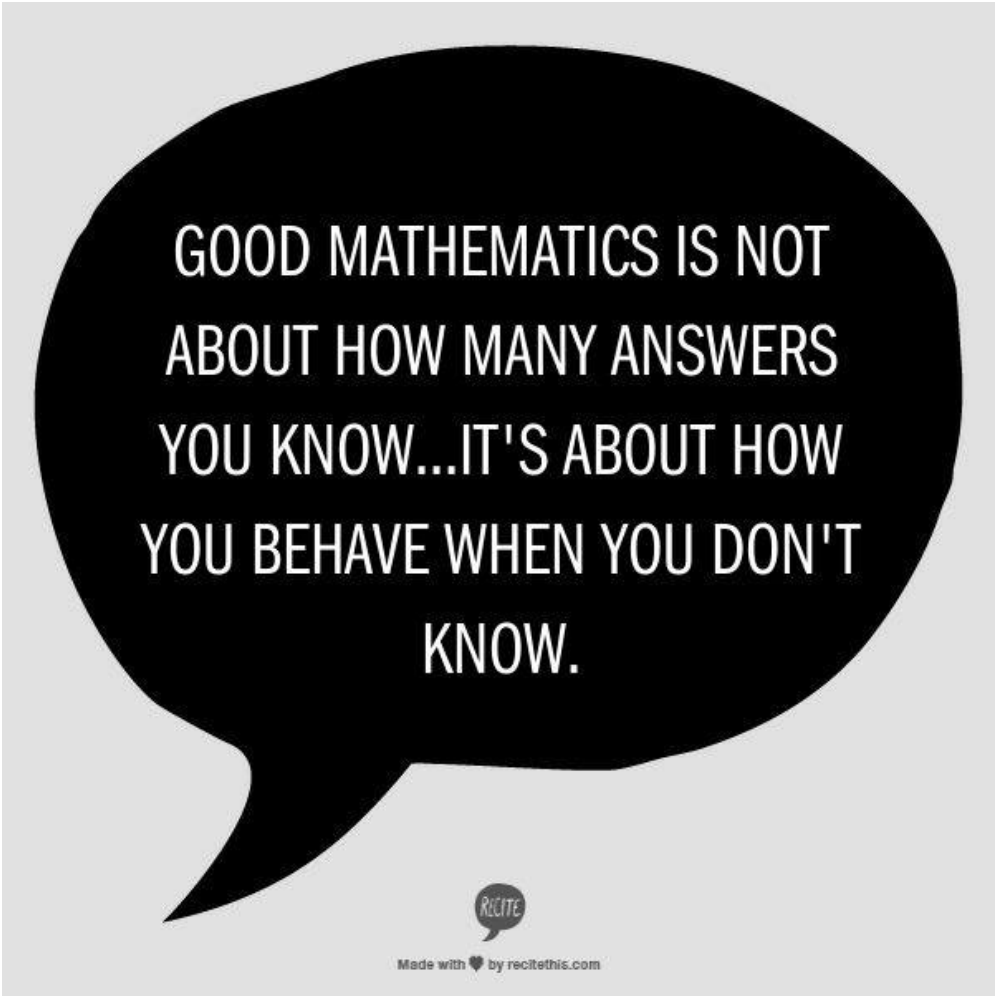
When You Don't Know...



Creating Mathematics

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- Failing: Try. Fail. Understand. Win.

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  e.g. Groups, rings, fields,...
- **Universal algebra:** studies axiom systems for their own sake.
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  What equations are true of all groups?
  Or of certain kinds of groups?
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The Five-Minute Thesis Problem

- C $(x * y = y * x)$ + I $(x * x = x)$ + A $(x * (y * z) = (x * y) * z$
- C $(x * y = y * x)$ + I $(x * x = x)$ + "weak associativity"
  e.g. $(x * x) * (y * z) = ((x * x) * y) * z$
- Which are strongest? Weakest? Equiv.? (Ask a computer!)
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- Post-Classification: Generate structures, look for patterns!

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- Where else do you see us?
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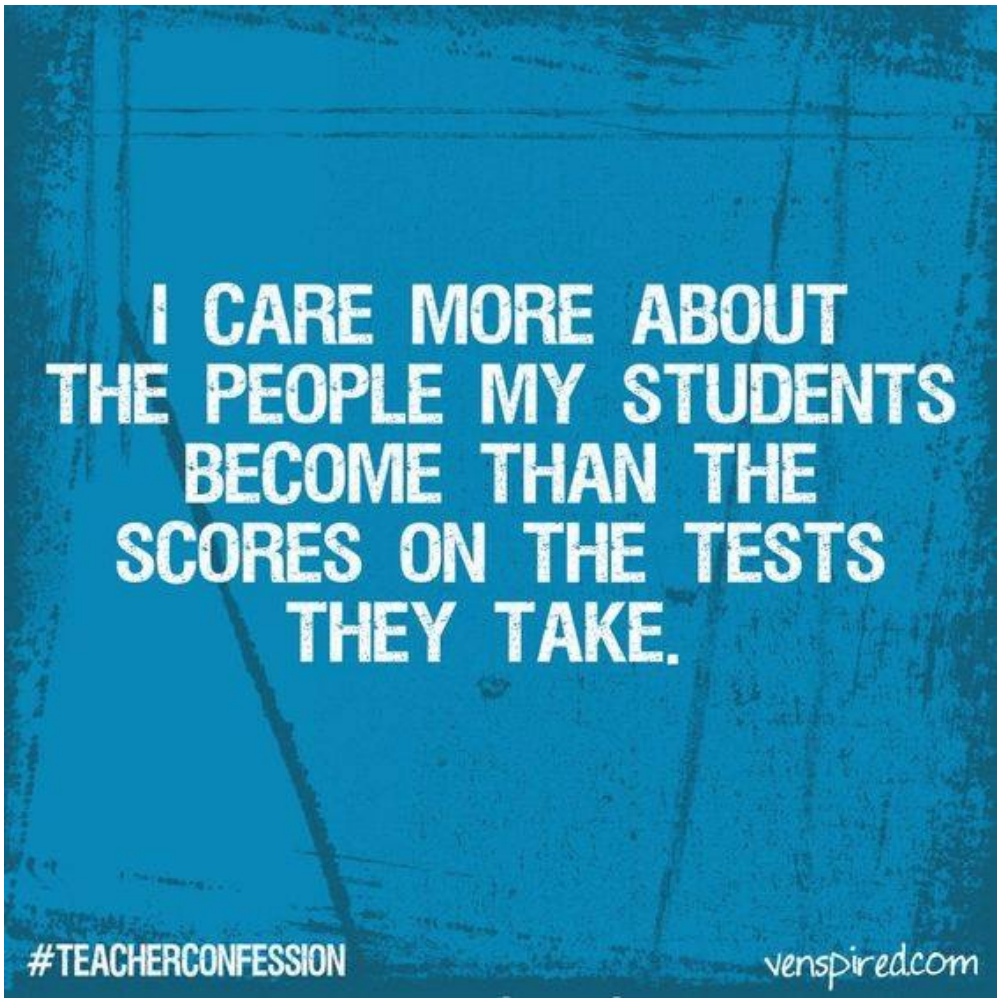
Care More



Link: The Lesson of Grace In Teaching

Try New Things

What the Heck is IBL?

- Student, subject, and their interaction are primary.
  Be a mediator in the middle.
- Inquiry-Based Learning is...
  1. Deep engagement with rich mathematics.
  2. Opportunities to collaborate
- Provide authentic encounters with mathematical thinking!

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- Practice your elevator pitch! ("I studied algebraic...")
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Questions?


One more thing...

Could I Really...?

Lean On Others

You Just Might Succeed

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