

# MSRI: The Role of the Mathematics Department in the Mathematical Preparation of Teachers

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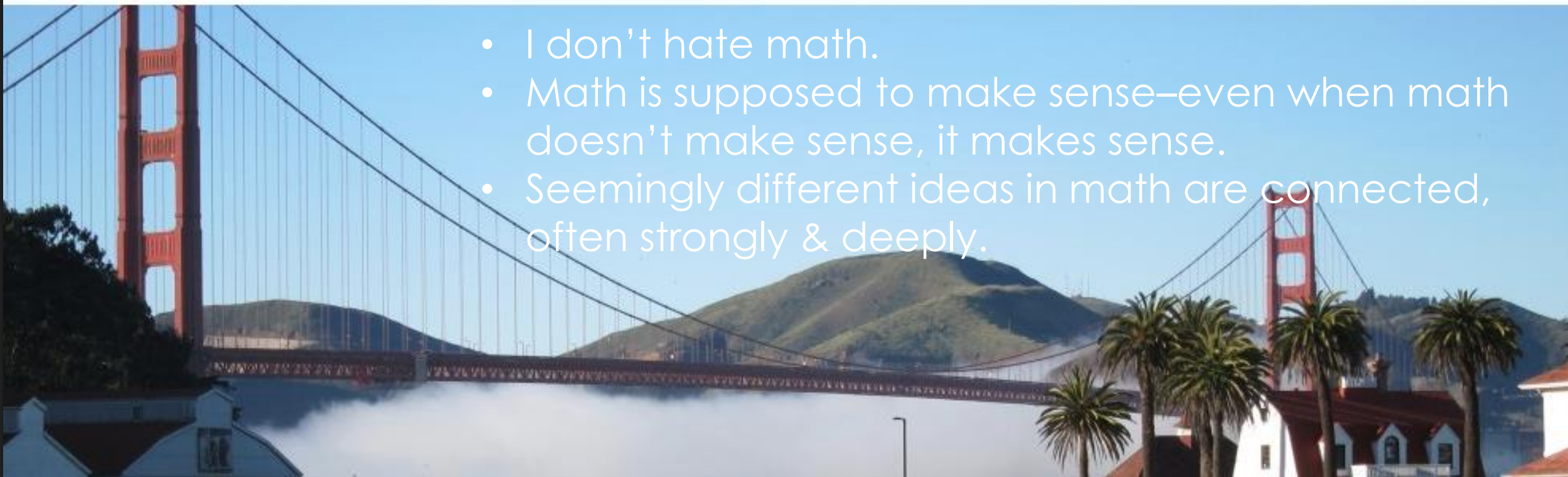
# The Space Between the Numbers

Telling Stories, Teaching Math

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*How did your math courses/major prepare you for teaching?*

- I don't hate math.
- Math is supposed to make sense—even when math doesn't make sense, it makes sense.
- Seemingly different ideas in math are connected, often strongly & deeply.





Twitter



**Rebecca Phillips** @RPhillipsMath · Feb 14

@btwnthenumbers big picture of how "algebra" works, the beauty of math, and cool stuff to toss out as teasers.

Details



**Rebecca Phillips**  
@RPhillipsMath



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@btwnthenumbers even tho I'm in MS, it helps I'm a mathematician 1st. I know where they're headed and they believe me. & I bring passion.

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8:45 AM - 15 Feb 2014



**Christopher** @Trianglemancsd · 8s

@btwnthenumbers To the extent that courses provided multiple views of topics—either within a course or across several courses...

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**Christopher** @Trianglemancsd · 23s

@btwnthenumbers ...I have found them useful to draw upon in thinking about curriculum, lesson planning, student thinking, etc.

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**Ashli** @Mythagon · 2m

[@btwnthenumbers](#) by setting up opportunities for connections between maths to get made.

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**Ashli** @Mythagon · 37s

[@btwnthenumbers](#) HS didn't help me see the coherence of maths. My college experience was critical for that.

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**Anna** @Borschtwithanna · 34m

@btwnthenumbers Made the beauty of math more apparent... That it wasn't a series of algorithms to be memorized, but a creative endeavor.

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**“The good ones  
cemented the notion  
that math is about  
problem solving.”**

**-suevanhattum**

The bad ones, which were too hard, gave me more empathy for the position most of my students are in. It goes too fast. They need more time and practice to make connections between the ideas.

The good ones cemented the notion that math is about problem solving. A problem that makes me tear my hair out or bite my nails off is so very satisfying once I've solved it.



**“Math knowledge I missed in my work was the part how to explain some concepts in appropriate level for my students.”**

**-jelena100janovic**

p.s. Thanks for asking ;-)

I studied, live and work in Serbia. I had to have math diploma - somewhere between bachelor and master - in order to be math teacher. 70% of what I studied I never used in my teaching, but it was important for me to be familiar with "big picture" in order to explain that to kids.

Math knowledge I missed in my work was the part how to explain some concepts in appropriate level for my students.



**“I learned ... ways to structure a class to focus on understanding: problem sets filled with proofs, open book tests and class as work time.”**

**-Tina C.**

Some of what I learned was ways to structure a class to focus on understanding: problem sets filled with proofs, open book tests and class as work time.

Some of what I learned is what you said - taking Real Analysis shows the why of Calculus, taking Number Theory shows the why of our number system and operations.

"I look at teaching a lot like I look at mathematics: you can watch someone else do it all you want ... but it isn't until you actually try it that you'll know whether or not you understand it."



Trial by Blogging

First, the majority of my math classes taught me *how not to teach*. Too much lecture. Too many book problems. Almost no interaction. On the other hand, my later education classes taught me that too much group work *is just as bad* if not worse. There's a fine line somewhere between those two extremes.

My math major did have one useful course though in terms of teaching down the road: Math Colloquium ... Over the course of the semester, we had to prepare a 40 minute talk, and then near the end of the semester we actually had to give our talk to our fellow students and all our professors.